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1. Performance tests for children of pre-school age—R. STUTSMAN
2. An experimental study of the eidetic type—H. KLÖVER
- 3 & 4. A study of natio-racial mental differences—N. D. M. HIRSCH
5. A psychological study of juvenile delinquency by group methods—J. W. BRIDGES AND K. M. B. BRIDGES
6. The influence of puberty praecox upon mental growth—A. GESELL

VOLUME 2—1927

- 1 & 2. The mind of a gorilla—R. M. YERKES
3. The role of eye-muscles and mouth-muscles in the expression of the emotions—K. DUNLAP
4. Family similarities in mental-test abilities—R. R. WILLOUGHBY
5. Coordination in the locomotion of infants—L. H. BURNSIDE
6. The mind of a gorilla: Part II. Mental development—R. M. YERKES

VOLUME 3—January-June, 1928

1. An experimental study of the olfactory sensitivity of the white rat—J. R. LIGGETT
2. A photographic study of eye movements in reading formulae—M. A. TINKER
3. An experimental study of the East Kentucky mountaineers—N. D. M. HIRSCH
4. Responses of foetal guinea pigs prematurely delivered—G. T. AVERY
5. Objective differentiation between three groups in education (teachers, research workers, and administrators)—M. B. JENSEN
6. The effect of segregation on the sex behavior of the white rat as measured by the obstruction method—M. JENKINS

VOLUME 4—July-December, 1928

1. Observation and training of fundamental habits in young children—E. A. BOTT, W. E. BLATZ, N. CHANT, AND H. BOTT
- 2 & 3. Determination of a content of the course in literature of a suitable difficulty for junior and senior high school students—M. C. BURCH
- 4 & 5. Methods for diagnosis and treatment of cases of reading disability—M. MONROE
6. The relative effectiveness of lecture and individual reading as methods of college teaching—E. B. GREENE

VOLUME 5—January-June, 1929

1. The age factor in animal learning: I. Rats in the problem box and the maze—C. P. STONE
2. The effect of delayed incentive on the hunger drive in the white rat—E. L. HAMILTON
3. Which hand is the eye of the blind?—J. M. SMITH
4. The effect of attitude on free word association-time—A. G. EKDAHL
5. The localization of tactual space: A study of average and constant errors under different types of localization—L. E. COLE
6. The effects of gonadectomy, vasotomy, and injections of placental and orchic extracts on the sex behavior of the white rat—H. W. NISSEN

VOLUME 6—July-December, 1929

1. Learning and growth in identical infant twins: An experimental study by the method of co-twin control—A. GESELL AND H. THOMPSON
2. The age factor in animal learning: II. Rats on a multiple light discrimination box and a difficult maze—C. P. STONE
3. The acquisition and interference of motor habits in young children—E. MCGINNIS
4. A vocational and socio-educational survey of graduates and non-graduates of small high schools of New England—A. D. MUELLER
- 5 & 6. A study of the smiling and laughing of infants in the first year of life—R. W. WASHBURN

VOLUME 7—January-June, 1930

1. Tensions and emotional factors in reaction—E. DUFFY
2. Teacher influence on class achievement: A study of the relationship of estimated teaching ability to pupil achievement in reading and arithmetic—H. R. TAYLOR
- 3 & 4. A study of the effect of inverted retinal stimulation upon spatially coordinated behavior—P. H. EWERT
5. A study of the mental development of children with lesion in the central nervous system—E. E. LORD
6. An experimental study upon three hundred school children over a six-year period—N. D. M. HIRSCH

VOLUME 8—July-December, 1930

1. The amount and nature of activities of newborn infants under constant external stimulating conditions during the first ten days of life—O. C. IRWIN
2. Race and social differences in performance tests—S. D. PORTEUS, *et al.*
3. Language and growth: The relative efficacy of early and deferred vocabulary training, studied by the method of co-twin control—L. C. STRAYER
4. Eye-movements and optic nystagmus in early infancy—J. M. MCGINNIS
- 5 & 6. Reactions of kindergarten, first-, and second-grade children to constructive play materials—L. FARWELL

VOLUME 9—January-June, 1931

- 1 & 2. The status of the first-born with special reference to intelligence—H. H. HSIAO
- 3 & 4. An experimental study of bright, average, and dull children at the four-year mental level—H. P. DAVIDSON
5. An historical, critical, and experimental study of the Seashore-Kwalwasser test battery—P. R. FARNSWORTH
6. A comparison of difficulty and improvement in the learning of bright and dull children in reproducing a descriptive selection—F. T. WILSON

VOLUME 10—July-December, 1931

1. A comparative study of a group of southern white and negro infants—M. B. MCGRAW
- 2 & 3. An experimental study of prehension in infants by means of systematic cinema records—H. M. HALVERSON
4. The limits of learning ability in kittens—A. M. SHUEY
- 5 & 6. The effect of habit interference upon performance in maze learning—O. W. ALM

VOLUME 11—January-June, 1932

1. General factors in transfer of training in the white rat—T. A. JACKSON
2. The effect of color on visual apprehension and perception—M. A. TINKER
3. The reliability and validity of maze experiments with white rats—R. LEEPER
4. A critical study of two lists of best books for children—F. K. SHUTTLEWORTH
- 5 & 6. Measuring human energy cost in industry: A general guide to the literature—R. M. PAGE

VOLUME 12—July-December, 1932

1. Family resemblances in verbal and numerical abilities—H. D. CARTER
2. The development of fine prehension in infancy—B. M. CASTNER
- 3 & 4. The growth of adaptive behavior in infants: An experimental study at seven age levels—H. M. RICHARDSON
- 5 & 6. Differential reactions to taste and temperature stimuli in newborn infants—K. JENSEN

VOLUME 13—January-June, 1933

1. A critique of sublimation in males: A study of forty superior single men—W. S. TAYLOR
2. A study of the nature, measurement, and determination of hand preference—H. L. KOCH, *et al.*
3. The growth and decline of intelligence: A study of a homogeneous group between the ages of ten and sixty—H. E. JONES AND H. S. CONRAD
4. The relation between the complexity of the habit to be acquired and the form of the learning curve in young children—M. L. MATTSON
5. Eating habits in relation to personality development of two- and three-year-old children: A study of sixty-nine children in two nursery schools—A. A. ELIOT
6. Coordinating mechanisms of the spinal cord—O. C. INGBRITSSEN

Genetic Psychology Monographs (continued)

VOLUME 14—July-December, 1933

- Mental growth during the first three years: A developmental study of sixty-one children by repeated tests—N. BAYLEY
A study of triplets, including theories of their possible genetic relationships—F. N. ANDERSON AND N. V. SCHEIDEMANN
The objective measurement of emotional reactions—H. V. GASKILL
Development of behavior in the fetal cat—J. D. CORONIOS
A study of certain language developments of children in grades four to twelve, inclusive—L. L. LABRANT
The effect of early and delayed practice on memory and motor performances studied by the method of co-twin control—J. R. HILGARD

VOLUME 15—January-June, 1934

- Studies in the psychology of tone and music—P. R. FARNSWORTH
Motor learning of children in equilibrium in relation to nutrition—E. L. BEEBE
Discrimination learning of pattern and size in the goldfish *Carassius auratus*—J. B. ROWLEY
Limits of learning ability in the white rat and the guinea pig—B. F. RIESS
6. The limits of learning ability in rhesus monkeys—H. A. FELD

VOLUME 16—July-December, 1934

- A statistical study of ratings on the California Behavior Inventory for Nursery-School Children—H. S. CONRAD
An eye-movement study of objective examination questions—A. FRANDSEN
An experimental study of constitutional types—O. KLINBERG, S. E. ASCH, AND H. BLOCK
The development of a battery of objective group tests of manual laterality, with the results of their application to 1300 children—W. N. DUKOST
6. An experimental study in the prenatal guinea-pig of the origin and development of reflexes and patterns of behavior in relation to the stimulation of specific receptor areas during the period of active fetal life—L. CARMICHAEL

VOLUME 17—January-December, 1935

- Organization of behavior in the albino rat—R. L. THORNDIKE
Brightness discrimination in the rhesus monkey—M. P. CRAWFORD
The limits of learning ability in cebus monkeys—A. M. KOCH
Nature-nurture and intelligence—A. M. LEAHY
On intelligence of epileptic children—E. B. SULLIVAN AND L. GAHAGAN
A study of the play of children of preschool age by an unobserved observer—D. L. COCKRELL
VOLUME 18—January-December, 1936

- Sex differences in variational tendency—Q. MCNEMAR AND L. M. TERMAN
The process of learning to dress among nursery-school children—C. B. KEY, M. R. WHITE, M. P. HONZIK, A. B. HEINEY, AND D. ERWIN
A study of the present social status of a group of adults, who, when they were in elementary schools, were classified as mentally deficient—W. R. BALLER
The influence of specific experience upon mental organizations—A. ANASTASI
6. Studies in aggressiveness—L. BENDER, S. KEISER, AND P. SCHILDER

VOLUME 19—January-December, 1937

- Psychological bases of self-mutilation—C. DABROWSKI
Masculine temperament and secondary sex characteristics: A study of the relationship between psychological and physical measures of masculinity—H. GILKINSON
A psychological study of forty unmarried mothers—R. D. NOTTINGHAM
Behavior problems in the children of psychotic and criminal parents—L. BENDER
Domination and integration in the social behavior of young children in an experimental play situation—H. H. ANDERSON
The sequential patterning of prone progression in the human infant—L. B. AMES

VOLUME 20—January-December, 1938

- The relationship between characteristics of personality and physique in adolescents—P. S. DE Q. CAROT
Behavior problems of elementary school children: A descriptive and comparative study—J. V. MASTEN
Graphic representation of a man by four-year-old children in nine prescribed drawing situations—P. F. GRIDLEY
Differences between two groups of adult criminals—R. S. TOLMAN
A comparative study by means of the Rorschach method of personality development in twenty pairs of identical twins—E. TROUP
Individual differences in the facial expressive behavior of preschool children: A study by the time-sampling method—C. SWAN

VOLUME 21—January-December, 1939

- An experimental analysis of "level of aspiration"—R. GOULD
Some light on the problem of bilingualism as found from a study of the progress in mastery of English among pre-school children of non-American ancestry in Hawaii—M. E. SMITH
Domination and social integration in the behavior of kindergarten children and teachers—H. H. ANDERSON
The capacity of the rhesus and cebus monkey and the gibbon to acquire differential response to complex visual stimuli—W. E. GALT
The social-sex development of children—E. H. CAMPBELL

VOLUME 22—January-December, 1940

- Measuring human relations: An introduction to the study of the interaction of individuals—E. D. CHAPPEL
Aggressive behavior in young children and children's attitudes toward aggression—M. D. FITE
Student attitudes toward religion—E. NELSON
The prediction of the outcome-on-furlough of dementia praecox patients—J. S. JACOB
Significant characteristics of preschool children as located in the Conrad inventory—K. H. READ
Learning by children at noon-meal in a nursery school: Ten "good" eaters and ten "poor" eaters—J. B. MCCAY, E. B. WARING, AND P. J. KRUSE

- Studies in the interpretation of play: I. Clinical observation of play disruption in young children—E. H. ERIKSON
VOLUME 23—January-June, 1941

- An analysis of certain variables in a developmental study of language—F. M. YOUNG
Infant development under conditions of restricted practice and of minimum social stimulation—W. DENNIS
An analysis of the mental factors of various age groups from nine to sixty—B. BALINSKY
Factors influencing performance on group and individual tests of intelligence: I. Rate of work—M. W. BENNETT
Individual differences in apperceptive reaction: A study of the response of preschool children to pictures—E. W. AMEN
VOLUME 24—July-December, 1941

- Twins T and C from infancy to adolescence: A biogenetic study of individual differences by the method of co-twin control—A. GESELL AND H. THOMPSON
Finger nail-biting: Its incipency, incidence, and amelioration—A. L. BILLIG
An experimental study of the factors of maturation and practice in the behavioral development of the embryo of the frog, *Rana pipiens*—A. FROMME
The Fels child behavior scales—T. W. RICHARDS AND M. P. SIMONS
Measurement of the size of general English vocabulary through the elementary grades and high school—M. K. SMITH
Stereotypes in the field of musical eminence—P. R. FARNSWORTH

VOLUME 25—January-June, 1942

- A study of factors determining family size in a selected professional group—J. C. FLANAGAN
A genetic study of geometrical-optical illusions—A. WALTERS
Interpretation of behavior-ratings in terms of favorable and unfavorable deviations: A study of scores from the Read-Conrad Behavior Inventory—K. H. READ AND H. S. CONRAD
Are there any innate behavior tendencies?—J. B. SCHOELLAND
An investigation of the intelligibility of the speech of the deaf—C. V. HUDGINS AND F. C. NUMBERS

Genetic Psychology Monographs (continued)

VOLUME 15—July-December, 1942

1. The critical frequency limit for visual flicker in children between the ages of 6 and 18—V. L. MILLER
2. Some factors determining handedness in the white rat—K. L. WESTWORTH

VOLUME 16—January-June, 1943

1. Comparison of children's personality traits, attitudes, and intelligence with parental occupation—N. R. MADDY
2. A comparative study of mental functioning patterns of problem and non-problem children seven, eight, and nine years of age—M. L. PIGNATELLI

VOLUME 17—July-December, 1943

1. Separation anxiety in young children: A study of hospital cases—H. ECKELSTON
2. Correlates of vocational preferences—W. A. BRADLEY, JR.

VOLUME 18—January-June, 1944

1. Mental changes after bilateral prefrontal lobotomy—S. D. PORTEUS AND R. D. KEPNER
2. A twin-controlled experiment on the learning of auxiliary languages—B. PRICE, W. J. KOSTER, AND W. M. TAYLOR

VOLUME 19—July-December, 1944

1. A method of administering and evaluating the thematic appreciation test in group situations—R. M. CLARK
2. A study of anxiety reactions in young children by means of a projective technique—R. TEMPLE AND E. W. AMEN

VOLUME 20—January-June, 1945

1. The evolution of intelligent behavior in rhesus monkeys—B. WEINSTEIN
2. Perceptual behavior of brain-injured, mentally defective children: An experimental study by means of the Rorschach technique—H. WRNERS

VOLUME 21—July-December, 1945

1. A clinical study of sentiments: I.—H. A. MURRAY AND C. D. MORGAN
2. A clinical study of sentiments: II.—H. A. MURRAY AND C. D. MORGAN

VOLUME 22—January-June, 1946

1. Interpretation of spontaneous drawings and paintings—T. S. WACHNER
 2. Preferences for sex symbols and their personality correlates—K. FRANCK
- AND W. L. WOODS

VOLUME 23—July-December, 1946

1. The relation of emotional adjustment to intellectual function—J. L. DESPERT AND H. O. PIERCE
2. The smiling response: A contribution to the ontogenesis of social relations—R. A. SPITZ

VOLUME 24—January-June, 1947

1. The thematic apperception technique in the study of culture-personality relations—W. E. HENRY
2. A continuation study of anxiety reactions in young children by means of a projective technique—M. DOBKEY AND E. W. AMEN

VOLUME 25—July-December, 1947

1. A study of the vocational interest trends of secondary school and college women—A. M. CAWLEY
2. Maze test validation and psychosurgery—S. D. PORTEUS AND H. N. PETERS

VOLUME 26—January-June, 1948

1. The diagnostic implications of Rorschach's test in case studies of mental defectives—J. JOLLES
2. The radio day time serial: A symbiotic analysis—W. L. WARNER AND W. E. HENRY

VOLUME 27—July-December, 1948

1. The relation of personality characteristics and response to verbal approval in a learning task—G. L. GRACE
 2. The mechanism of vision. XVIII. Effects of destroying the visual "associative areas" of the monkey—K. S. LASHLEY
- A study of the relationship between handwriting and personality variables—P. CASTELNUOVA-TEDESCO

VOLUME 28—January-June, 1949

1. Modern language learning: The intensive course as sponsored by the United States Army, and implications for the undergraduate course of study—M. LIND
2. Conflict: A study of some interactions between appetite and aversion in the white rat—M. A. TOLCOTT

VOLUME 29—July-December, 1949

1. Schizophrenia and the MAPS test: A study of certain formal psycho-social aspects of fantasy production in schizophrenia as revealed by performance on the Make a Picture Story (MAPS) Test—E. S. SHNEIDMAN
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DOMAIN SPECIFIC LOCUS OF CONTROL AMONG BLACK, ANGLO, AND CHICANO UNDERGRADUATES*

University of Houston

JOHN P. GAA AND JAY H. SHORES

SUMMARY

The present study examined the assumption that minority groups, especially blacks, have significantly higher external locus of control scores. A domain specific locus of control measure, Locus of Control in Three Achievement Domains (LOCITAD), was administered to 29 Black, 299 Anglo, and 12 Chicano undergraduates at two Southern state universities.

Results indicated that (a) the black and Chicano Ss were significantly more internal than the Anglos with respect to success in intellectual activities; (b) there were no significant differences between groups in relation to physical activities; (c) the Anglo Ss were significantly more internal than either the Black or the Chicano Ss relative to social success; and (d) the Anglo Ss were significantly more internal than the Blacks who in turn were significantly more internal than the Chicano Ss with respect to social failures.

The findings indicate that locus of control generalizations across domains and success-failure are inappropriate, and that assumptions drawn in light of earlier work in the field need to be re-examined.

A. INTRODUCTION

The concept of internal-external locus of control evolved from Rotter's theoretical work in social learning (18, 19, 20, 22). Initially, the construct of locus of control was viewed as a pervasive generalized expectancy which evidenced itself in a variety of situations. Rotter's original I-E scale was based upon this conceptualization and was employed in numerous studies to examine locus of control differences among culturally divergent populations.

* Received in the Editorial Office, Provincetown, Massachusetts, on June 14, 1978, and given special consideration in accordance with our policy for cross-cultural research. Copyright, 1979, by The Journal Press.

A number of studies (3, 7, 10, 11, 12, 13, 22) indicate that members of minority groups, especially Blacks, have significantly higher external scores. It must be noted, however, that other results (25) have shown locus of control for Black and Anglo college students to be equivalent when social classes were similar.

Many locus of control studies have followed a line of research allied to that of Strickland (25), and based in part on Graves' study (6) of Ute, Chicano, and white Ss in which the researcher determined that cultural training had a primary effect upon the responses from culturally distinct subgroups. Several studies (5, 14, 15, 17, 26) have examined the influence of cultural training upon perceived locus of control in divergent (Jewish, Japanese, Swedish, American Indian, and Chicano) cultures.

Criticism of the original Rotter I-E scale has centered around its apparent lack of internal consistency when used with Black Ss (9, 27). Acknowledging this weakness and drawing from research on locus of control generated during its 10 years of application, Rotter (21) has reconceptualized the construct as possessing a domain specific characteristic.

Based upon this revised conceptualization of locus of control, Bradley (2) has developed a 47 item instrument which measures perceived acceptance of responsibility for both success and failure in the areas (domains) of intellectual, physical, and social activities. The resultant Locus of Control Inventory for Three Achievement Domains (LOCITAD) provides six independent subscales each indicating the degree of internality perceived by the individual in relation to activities within each specific area.

The present study sought to examine domain specific locus of control orientations across cultural groups. The researchers anticipated that culturally distinct groups would differ in their domain specific locus of control orientations. It was hypothesized that the Ss would present profiles of internality reflecting their unique cultural training.

B. METHOD

The sample population consisted of 340 juniors in teacher education programs at two state supported universities. The two student bodies from which the sample was drawn were from urban centers in the South. The undergraduate teacher education student bodies of these schools are comprised of approximately 71% Anglo, 20% Black, and 9% Chicano students. The sample population was comprised of 299 Anglos, 29 Blacks, and 12 Chicanos. Demographic information was collected from each S to allow the

researchers to identify suspected contaminating variables. As Stodtbeck (24) and Franklin (4) had noted in their studies, the researchers found a systematic bias in the data relative to the socioeconomic status of the Ss' parents. While several indicators of socioeconomic status were collected, the bias was reflected most strongly in the relationship of the mother's level of academic achievement to the independent variables. This finding, attributed in part to the predominance of females in the sample ($n = 260$), resulted in the researchers treating the mother's level of academic achievement as a covariate in the analysis.

The six scales which comprise the LOCITAD were treated as independent variables in separate analyses of covariance. Additionally, significant ($p < .05$) and near significant findings were subjected to *post hoc* comparison by means of the Scheffe' procedure (8).

C. FINDINGS

Relative to success in intellectual activities, the analysis of covariance indicated a significant ($p < .01$) group effect. The Scheffe analysis indicated that both the Blacks and the Chicanos were significantly ($p < .05$) more internal than the Anglos. The analysis of covariance indicated no significant differences when failure in intellectual activities was employed as the independent variable.

In the physical domain, the analyses of covariance indicated nonsignificant differences for both success ($p < .19$) and failure ($p < .10$). The Scheffé examination of the relationships among the scores of the Ss revealed the three groups to be substantially equivalent in relation to success, and the Blacks to be substantially more external than both the Anglos and the Chicanos with respect to failure.

Relative to success and failure in social activities, the analysis of covariance indicated no significant effects of group membership. In light of the Scheffé analyses indicating that the Anglos were significantly ($p < .05$) more internal when dealing with social success and that they were significantly ($p < .05$) more internal than the Blacks who in turn were significantly ($p < .05$) more internal than the Chicanos when dealing with social failure, the researchers presumed that the relative potency of the covariate masked cultural group effects.

In each of the six analyses of covariance the covariate, socioeconomic status as reflected in mother's level of academic achievement, was significant at the $p < .01$ level.

D. DISCUSSION

The findings substantiate the assumption that domain specific locus of control measures reflect distinct, but not consistent, differences in culturally divergent populations. The results indicate Black acceptance of an external orientation towards responsibility for failure in the physical and intellectual areas. Further, the social dimension results reaffirm Stephan and Kennedy's (23) position of the Chicano's perception of his subservient subculture status.

The distinct differences between success and failure scores, as well as differences between the domain scores far in excess of the one point difference in subscale length, indicate that the subscales may, in fact, be independent. These findings tend to support the work of Mirels (16), Rotter (21), and Bradley and Webb (1).

Studies which established the relative externality of Blacks (7, 13) have been supported by this study only in relation to the Black Ss' perception of their failures.

Strickland's (25) finding that Black and Anglo college students of similar social status were equivalent with regard to locus of control has been supported with regard to success in physical and social activities, but not in relation to the intellectual scales.

The work of Graves (6), Pehazur (17), Mehler (15), McGinnies (14), and Tyler and Holsinger (26), which established the effect of cultural training on perceived locus of control, is supported by the data of this study. However, while a portion of Garza and Ames' (5) findings are supported by this study, others are questioned. For example, the data indicate that the Chicanos were less internal in the social domain than either the Anglos or the Blacks.

This study has demonstrated that locus of control must be treated as a domain specific human characteristic. However, the results also suggest that the stability and independence of the subscales of the LOCITAD need to be established for culturally divergent populations. Additionally, the results call into question earlier assertions made by researchers regarding differences in locus of control orientations across cultural subgroups.

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THE EFFECTS OF SOCIAL DESIRABILITY,
INTELLIGENCE, AND MILIEU ON AN
AMERICAN VALIDATION OF THE
CONSERVATISM SCALE*¹

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SUMMARY

The purpose of this investigation was to validate the Conservatism Scale (C-scale) with American Ss, and in the process, test the effects of conservative milieu, dogmatism, social desirability, and intelligence on C-scale responses. It was expected that the C-scale would be related to both dogmatism and intelligence, but not to social desirability. Ninety-four university students from the southern United States were administered the Conservatism, Rokeach's Dogmatism, Crowne-Marlowe's Social Desirability, and Raven's *IQ* scales.

The results indicate that the C-scale is not contaminated by a social desirability response set. Significant positive correlations were obtained with the dogmatism scale, while intelligence was negatively related in a small, though significant way with conservatism. These results are discussed in terms of test format and mediation processes. That the C-scale was administered in a conservative culture had no effect on the pattern of C-scale responses, and there was no evidence that the expression of social attitudes was in any way divorced from underlying personality structure. The results indicate that the C-scale is a reliable and valid measure and can be satisfactorily used with American samples.

A. INTRODUCTION

The Conservatism Scale developed by Wilson and Patterson (19, 20) was proposed as an alternative to more traditional scales of a general authoritar-

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¹ Reprint requests should be sent to the second author at the Wisconsin address shown at the end of this article.

ian dimension. Instead of requiring Ss to evaluate lengthy and detailed propositions, which is the common form of most attitude measures, the authors constructed a scale comprised of brief labels or catch phrases representing familiar social issues. This format was said to avoid the influence of cognitive processes, grammatical confusion, task conflict, and desirability.

The ability of the Conservatism Scale to predict behavior has been demonstrated in widely diverse areas, such as race prejudice (1), self-concept (3), humor preference (21), and self-identification (10). Factor analysis has found the scale to reflect a general underlying factor (18) that has been described as being a personality dimension (16). It has also demonstrated satisfactory reliability and validity in numerous cultures (2, 9), though the lack of validation studies using American samples is glaring. Wilson (19), for example, reports only mean C-scale scores of three unpublished reports that use Americans as Ss. Clearly a test that purports to be an international measure of an enduring personality construct (2) needs further validation work done with American samples.

Though the C-scale has been found to possess a degree of construct validity (6), there is some question as to how well the scale resists socially desirable responses. In an early report Orpen (7) found a reduction of tendencies to respond in a socially desirable way with the use of the catch-item format, which is a principal claim of the test authors. However, there are at least two studies that report evidence to the contrary. Although Hartley and Holt (5) find that the catch-phrase format does indeed control for grammatical confusion, task conflict, and acquiescence, they fail to confirm the expectation that the scale also controls for social desirability. Schneider (15), using a German version of the C-scale, also reports a significant correlation between measures of social desirability and responses to C-scale items. Schneider suggests that a strong relationship between conservatism and social desirability is to be expected whenever "... the majority accepts conservative ideas and there are child rearing attitudes emphasizing norm conforming behavior" (16, p. 91).

The role that intelligence plays in responding to the social issues of the C-scale is also not at all clear. In our review of the literature we were able to uncover only the single unpublished report of Anderson and Race [cited in Wilson (19, p. 263)] which found a correlation of $-.16$ between the two constructs. If the C-scale is a valid measure of an intolerant personality domain, then it should display the same negative correlation with intelligence that is often found with other measures of general authoritarianism.

Thus the purpose of the present study is threefold: (a) to validate the C-scale using American samples by examining the correlation between the C-scale and the Rokeach Dogmatism Scale (14), another popular and valid measure of an intolerant disposition; (b) to determine the correspondence between the C-scale and a measure of social desirability (4), and, in the process, to test Schneider's thesis concerning the propensity for responses in the direction of social desirability in conservative milieus; (c) to assess the relationship between conservatism and intelligence.

If the Conservatism Scale accurately reflects the underlying construct of an intolerant personality domain, then the following results would be expected:

1. There will be a moderate, positive relationship between conservatism and dogmatism.
2. There will be no relationship between conservatism and social desirability.
3. There will be a significant, negative relationship between conservatism and intelligence.

B. METHOD

Ss were 28 male and 66 female students from a large, urban university in the deep south of the United States, an area noted for defense of conservative social issues and traditional values. Each *S* was administered the C-scale (20), the Dogmatism Scale Form E (14), the Crowne-Marlowe Social Desirability scale (4), and Raven's Advanced Progressive Matrices test of abstract reasoning (11), according to standard instructions accompanying each test. The dependent measures were completed anonymously and in group settings. The order of test presentation was randomized for each *S* as a control for order effects. The instructions for the Raven test were written rather than orally presented so that it could be included in the self-administered battery. Following the precedent of Ray (12) we used "Flogging" rather than "Birching" as a C-scale item for the sake of clarity. Test scoring for all the measures was according to standard procedures.

C. RESULTS

The internal consistency reliability of the C-scale was determined by calculating Cronbach's alpha, which yielded a reliability coefficient of .80. This value approximates the alpha coefficient of .83 reported by Ray (12), but is somewhat lower than the .91 reported by Wilson (18). It is also lower than the split-half reliabilities found by correlating scores on the first 25

items with scores on the second 25 and correcting for attenuation with the Spearman-Brown "Prophecy Formula," which has usually yielded coefficients in the .90's (19).

The mean score on the C-scale was 42.37, which compares favorably with mean scores of 42.21 and 46.00 reported previously for American college Ss (19, p. 54). Intertest correlation coefficients were determined by the Pearson product-moment formula and are presented in Table 1. As expected, conservatism showed no correspondence with social desirability ($r = -.0047$, $p = .482$); a significant negative correlation with the Raven's test of intelligence ($r = -.17$, $p < .05$); and a positive correlation with the D-scale ($r = .32$, $p = .001$). As Table 1 further shows, the consistency within the conservatism domain is substantially higher than the correlation between conservatism and any other domain. This suggests that conservatism is a domain independent of social desirability and *IQ*, and possibly interdependent with dogmatism. All correlations, then, are in the expected direction and of the appropriate magnitude, suggesting a construct valid conservatism measure.

D. DISCUSSION

Results of this study seem to indicate that the Conservatism Scale is a reliable and valid measure and can be used quite satisfactorily with American samples. The negligible correlation with the Crowne-Marlowe measure of social desirability apparently refutes the evidence of Hartley and Holt (5) and Schnieder (15) that the C-scale may be contaminated by tendencies to respond in terms of social desirability. This extremely low correlation can also be taken as evidence against Schneider's contention

TABLE 1
CORRELATION MATRIX

Scale	C-scale	D-scale	SD	IQ
Conservatism (C-scale)	.80 ^a	.32**	-.0046	-.17*
Dogmatism (D-scale)		.82	-.028	-.26**
Social Desirability (SD)			.79	-.08
Raven's Advanced Progressive Matrices (IQ)				.75 ^b

^a Coefficient alpha is represented on the main diagonal.

^b A split-half coefficient was used to determine internal consistency for the Raven's Advanced Progressive Matrices.

* $p < .05$.

** $p < .01$.

that socially desirable responses are to be expected whenever the majority accepts conservative viewpoints.

Of principal interest to us is the significant correlation with dogmatism. Though the .32 correlation may seem lower than expected for supposedly interrelated constructs, the moderate value seems appropriate given the premises underlying each test. The test format of the Dogmatism Scale is the complete antithesis of the C-scale, though they both attempt to measure similar personality approaches. Each item of the D-scale is a lengthy proposition that requires a considerable degree of cognitive mediation in arriving at a response. Indeed, the dogmatism construct is described by Rokeach (13, 14) as a general authoritarian dimension punctuated by a definite cognitive style. However, the very rationale for the construction of the C-scale in the catch-item format is to reduce the role of cognition in favor of measuring the immediate, affective response to the issue, as well as reducing other problems said to affect the propositional format: namely, grammatical confusion, task conflict, and social desirability. The significant correlation between the two measures is evidence that they both measure a related personality domain; but if the C-scale controls for cognitive processes, it should not correlate highly with a measure that seemingly emphasizes cognitive mediation. Thus the two measures are moderately related because they tap similar dimensions, but the correlation is not high because the D-scale emphasizes cognition, the C-scale controls for it.

The same explanation can be used to explain the low, though significant correlation with intelligence. Measures of general authoritarianism have traditionally shown a negative relationship with intelligence and the C-scale conforms to this expectation, to its credit. However, since the C-scale controls for cognitive mediation, and since intelligence is a decidedly cognitive construct, then intelligence should play a less obvious role in evaluating responses to C-scale items, hence the low correlation.

One additional point needs to be made. Orpen (8) argues that in the case of social attitudes that are explicitly approved by the cultural norms, many individuals will be encouraged to hold these attitudes regardless of their basic personality structure. He invokes this argument to explain the non-significant correlation ($r = .06$) that he found between the short form of the D-scale (17) and the C-scale, using white South Africans as Ss (9). The lack of correlation between the C and D scales in the Orpen and Rodenwoldt (9) data may be a reflection of the possible lowered reliability as a result of fewer D-scale test items, or because of peculiarities of the South African sample. We find no evidence that the expression of social attitudes is in any

way divorced from underlying personality dynamics, especially when it is clear that many in our sample also endorse traditional attitudes and values.

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CULTURAL AND SEXUAL EFFECTS ON PSYCHOLOGICAL CONSERVATISM IN CHILDREN*¹

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SUMMARY

The present study investigated psychological conservatism in Indian and white schoolchildren in South Africa. Forty-eight 8-year-old boys and girls completed separate social desirability and psychological conservatism scales. Responses were analyzed by means of 2×2 (race \times sex) covariance analyses, with the social desirability scales as the covariate. White children were more ethnocentric but less conservative regarding sex and religion than their Indian counterparts. Females were more conservative than males regarding punitiveness, religion, and sex. These results may well be a function of the South African racial situation, while the utility of a global index is questioned.

A. INTRODUCTION

The construct of psychological conservatism derives some validity from research which has consistently demonstrated its applicability across different cultural settings. In this respect, a substantially comparable factor structure has been found in South Africa (18), New Zealand, and the United Kingdom (1), the United States (15), and Korea (16). It is therefore surprising that the issue of possible cross-cultural differences in psychological conservatism has been largely neglected. In a single study investigating this issue, no difference between American Indians and American whites emerged on the total conservative score (2). Since consistent factor structures have appeared across different cultural settings, their study (2) which concentrated on a global conservation index only, may provide a narrow

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perspective about the nature of possible cross-cultural differences in psychological conservatism. It would therefore be important when studying this construct cross-culturally to investigate each factor separately as well as the total conservative index. Furthermore, as Nias (10) points out that children's conservatism may reflect parental prohibitions, it is possible that some insight regarding the transmission of social attitudes may be gained when studying their psychological conservatism.

In view of Whiting (14) and Danziger's (3) observation that much cross-cultural research is suspect in that it must frequently study cultures that are situated some considerable distance from each other resulting in what may more accurately be described as cross-national research, the South African situation offers unique possibilities for controlling this variable. Owing to existing legislation in South Africa, different cultural groups live in close proximity to one another, although they are isolated socially and educationally within this context; hence a comparison of Indian and white male and female schoolchildren should be of value particularly if the factors involved in children's psychological conservatism—*viz.*, punitiveness, religion, sex, and ethnocentrism—are also investigated. Differences between these two cultural groups may be expected, since Indian children in South Africa are generally taught to obey strict parental authority (8). More particularly, close religious ties in this group may foster a more conservative attitude in religious beliefs, while the South African sociopolitical structure is likely to promote ethnocentrism in whites. In addition, it is important to investigate whether the tendency for females to be more conservative than males (10) exists regardless of cultural differences.

B. METHOD

1. Subjects

Forty eight children (24 Indians and 24 whites, each group comprising an equal number of males and females) participated in this study. The *Ss* (M age = 8.52 years; SD = .45) were all third grade pupils attending racially segregated schools. Both schools were situated in middle class areas, approximately 25 kilometers from each other.

2. Instruments

Two questionnaires were used. (a) Lunneborg and Lunneborg's (7) Social Desirability scale for children, consisting of 20 items answered either "yes" or "no." Satisfactory reliabilities for this scale have been reported (7). (b)

Insel and Wilson's (5) Children's Conservatism scale, comprising 50 items, was fashioned after the adult Conservative scale developed as a result of the methodological problems regarding other authoritarianism and dogmatism scales (17). Reliabilities and validity for the children's scale are acceptable and response set is controlled for (10), although no data exist regarding its possible correlation with social desirability. Scoring of this questionnaire was computed so that in addition to a global conservative index (the summation of all 50 items), four factors were identified viz., ethnocentrism, religion, sex, and punitiveness. Identification of these four factors followed Nias' (10) suggestions and combines the results of Promax and Varimax factor analyses. This procedure has been shown to be as accurate as an equal-weighting scoring procedure (1, 2). A high score on the global conservative index, as well as the four factors reflects a high degree of conservatism.

3. Procedure

All Ss completed the two questionnaires which were administered individually, in counterbalanced order. As previous research has shown that the race of the *E* can influence test responding (13), each child was interviewed by an *E* of the same cultural group. Finally, all interview sessions began after the *E* assured Ss that they would not miss anything important while absent from their regular class periods.

C. RESULTS

A significant relationship between social desirability scores and the overall conservatism measure was obtained ($r = -.38$, $df = 47$, $p < .005$); in addition, a 2×2 (race \times sex) analysis of variance with social desirability as the dependent variable revealed a highly significant race main effect ($F = 44.53$, $df = 1/43$, $p < .0001$). It was therefore decided to utilize the social desirability score as the covariate in the ensuing analyses, thereby statistically controlling for its possible effects on psychological conservatism.

A two-way (race \times sex) covariance analysis, with social desirability as the covariate, was performed on the global conservatism score. This analysis revealed a significant main effect for sex ($F = 6.64$, $df = 1/43$, $p < .015$), with females more conservative than males regardless of cultural group membership. No significant main effects for race, or any interaction effects, were yielded on this global index.

Four further 2×2 (race \times sex) covariance analyses were then performed on each of the separate conservatism factors. Females were found to be

more conservative on three of the factors; *viz.*, punitiveness ($F = 5.68$, $df = 1/43$, $p < .025$), religion ($F = 5.17$, $df = 1/47$, $p < .03$), and sex ($F = 4.84$, $df = 1/47$, $p < .035$). With regard to race main effects, whites were, as predicted, more ethnocentric ($F = 10.54$, $df = 1/47$, $p < .002$) but less conservative on the religion factors ($F = 5.54$, $df = 1/47$, $p < .005$) than their Indian counterparts. A further difference was found on the sex factor ($F = 4.84$, $df = 1/47$, $p < .035$) with whites being less conservative. No other significant main effects or interactions were obtained ($p < .05$ in all cases).

D. DISCUSSION

No significant race effects appeared on the total conservatism score, although females were significantly more conservative than males. However, the interpretation to be given these results is open to question. It is doubtful whether the global conservatism score is meaningful, since it consists of the summation of 50 items, containing four conceptually distinct factors, each comprising eight items. This may partly explain Bahr and Chadwick's (2) failure to uncover significant differences between American Indians and American whites, inasmuch as a large proportion of the 50 items in the adult scale they used represents conceptually different factors. More specifically, it is possible that no significant race differences were revealed on the global conservatism score in the present study, since two of the four factors in the original children's scale loaded negatively (*viz.*, ethnocentrism and punitiveness), the other two positively (*viz.*, sex and religion). The problem of simply summing all the items to yield an index of global conservatism is therefore compounded. Moreover, the salience of the significant sex main effects is minimized, especially since females were more conservatively oriented than males on three of the four factors.

The examination of ethnocentrism within the South African context, is of particular interest, since differences may be expected between different societies (12). In the present sample, white children were significantly more ethnocentric than their Indian counterparts. This finding could reflect the white legislature's preoccupation with maintaining current social barriers and distances, which Ritchie (12) maintains is characteristic of ethnocentric societies. Furthermore, some Indian children may aspire to be part of the dominant white culture, an interpretation consistent with studies of children's racial preferences (6). Finally, the tendency for the Indian community as a whole to be viewed as "migrants" within the white society may predispose them to affiliate more with family than cultural groups, which

would be consistent with Danziger's (3) findings regarding an Italian group experiencing acculturation in Canada.

Several studies have shown male children to be more ethnocentric than females (10). This finding was not replicated in the present study which may, in part, reflect the tendency for membership of a particular cultural or racial group to be more important than sex group membership in South Africa, even at a young age.

Ritchie (12) has suggested that ethnocentrism and religion may covary. In the present study, however, Indians were significantly more conservative than whites regarding religion. This finding, however, is not surprising in view of the central role religion plays in the life of the Indian child (4, 8). These religious differences are important, as they may generalize to other areas of personality because of the role of this variable in the Indian child's social and family world. Significant sex differences were also encountered on this factor, females were more conservative than males. This is consistent with Nias' (9) findings concerning a British sample, and therefore further supports the contention that females may be more conservative than males regarding religion, irrespective of culture.

As expected, females were more conservative than males on the sex factor, which again accords with previous findings (9). In addition, that whites were less conservative regarding sex than their Indian counterparts is also to be expected, since strong sex taboos and sex role differentiations prevail within the Indian culture, with women's principal function being that of child-bearing and rearing (4, 8).

On the other hand, no significant differences were obtained between Indian and white children regarding punitiveness. This is somewhat surprising as Indian culture emphasizes a father figure who is distant, admired but feared, with discipline meted out in an authoritarian fashion (4). More specifically, Meer (8) points out that South African Indian children are taught to obey parental authority. Moreover, Ritchie (12, p. 313) maintains that child-rearing practices in ethnocentric societies are characterized by "... punishment, threat and deprivation." Since the white children in the present sample were significantly more ethnocentric than their Indian counterparts, it might therefore be assumed that they were also conservative regarding punitiveness. That no significant differences emerged between the two groups in this regard may thus reflect the tendency for both of them to be punitive. Significant sex differences, with females more punitive than males, were obtained. These findings again accord with those of Nias (9) regarding a sample of British children.

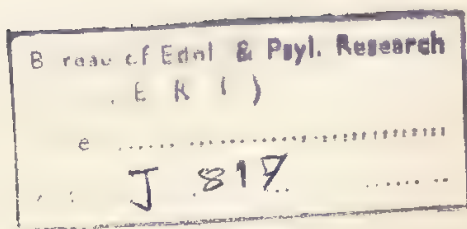
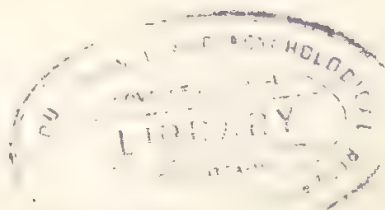
In conclusion, four issues are raised by the present study. First, it has been maintained (10, 11) that children's attitudes are inculcated mainly by parents. That fairly consistent and statistically significant cultural differences emerged regarding psychological conservatism suggests generalizability of these results to Indians and whites in South Africa as a whole. Second, overall mean scores for all items depict the present sample as being rather conservative when compared both with adult, white South Africans (18) and an adult sample in the United Kingdom and America (15). The question therefore arises regarding the relative degree of conservativeness among children in other, nonracially segregated societies and countries. Thirdly, since the differences in the present study occurred in a relatively young sample, it is important to assess when such differences become salient. Finally, the adequacy of a global conservatism score is open to question.

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THE EFFECTS OF EFFORT AND STIGMA ON HELPING*

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SUMMARY

A "bystander intervention" paradigm was employed to test the effects of type of person (stigmatized vs. nonstigmatized) and the costs of helping (high vs. low effort) on the helping behavior of 200 Canadian men and women standing on subway platforms. As predicted, there were no differences in the help given to the stigmatized and the nonstigmatized in the low effort condition, but the stigmatized were less likely to be helped than the nonstigmatized in the high effort condition ($p < .05$). The results were explained by an assumption that the desire to avoid the stigmatized heightens a person's sensitivity to alterations in the cost of helping. It is proposed that an increase in the cost of helping is "amplified" by the presence of a stigmatized other, but in the presence of a nonstigmatized other a person is less attentive to a modest increase in costs.

A. INTRODUCTION

The literature on helping behavior suggests that a physically stigmatized person evokes two competing response tendencies: a willingness to help, based on increased sympathy for the person; and a desire for avoidance, stemming from the reduced attractiveness of the person and the discomfort in dealing with him or her (2). These competing reactions can be related to the cost-reward matrix proposed by Piliavin, Rodin, and Piliavin (6). When confronted by either a stigmatized or nonstigmatized other, the person weighs the relative costs and rewards associated with helping. In the case of a stigmatized other, the competing reactions that are elicited tend simultaneously to increase the costs of helping and the rewards for helping. While the simple presence of a stigmatized other may not offer sufficient information to predict whether the increase in the cost factor will be greater

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or less than the increase in the reward factor (7), the competing reactions should differentially affect these two factors. If sympathy is a general reaction elicited by most physical stigma, then the tendency to increase helping will be a relatively invariant factor. However, the desire to avoid the stigmatized other should heighten the person's sensitivity to situational elements affecting the cost of helping. Any increase or decrease in the costs of helping would be much more salient to a person confronted with a stigmatized other than with a nonstigmatized other. Therefore, the rate of help given to the stigmatized, in comparison with the nonstigmatized, will be largely determined by the costs associated with helping. When the costs of helping are relatively low, greater help should be given to the stigmatized than the nonstigmatized due to the sympathy elicited by the former. When the costs of helping are high, the salience of this factor will result in less help being given to the stigmatized other than to the nonstigmatized other.

The results of several studies appear to be consistent with this analysis. Doob and Ecker (2) found no differences in the help given to the handicapped and nonhandicapped in a face-to-face situation. However, when helping did not entail further interaction (reduced costs), significantly greater help was given to the handicapped than to the nonhandicapped. Samerotte and Harris (7) found no differences between the disfiguring handicap and nonhandicapped conditions, while the neutral handicap resulted in significantly greater helping than either of the former conditions. While both studies show that reduced costs increase the rate of help to the handicapped, it is significant that neither study found that the handicapped were helped less than the nonhandicapped in face-to-face situations. Presumably, in the face-to-face situations employed, the relative strengths of the costs and the rewards for helping the handicapped and the nonhandicapped were equivalent. If the costs of helping are critical, however, then a further increase in the costs of helping in a face-to-face situation should result in less help being given to the handicapped as compared to the nonhandicapped.

The study described here was an attempt to vary the characteristics of the person requiring help (i.e., stigma and no stigma), and the costs of helping the person (i.e., high effort and low effort) in a face-to-face situation. It was predicted that there would be no differences in the help given the stigmatized and the nonstigmatized in the low effort situations. This prediction is consistent with the results found in the face-to-face conditions of the studies previously discussed. It was anticipated that the effects of high effort would vary with the type of victim. With a nonstigmatized

other, people are not expected to be highly sensitive to a modest increase in costs. However, the desire to avoid the stigmatized should heighten a person's sensitivity to an alteration in the costs of helping. Since high effort should significantly augment only the costs of helping a stigmatized other, it was also predicted that the stigmatized would be helped less than the nonstigmatized in the high effort situation.

B. METHOD

1. *Subjects and Confederates*

Ss were 100 male and 100 female subway riders equally distributed between five subway stations in Toronto. All Ss were apparently over 18 years of age, unhandicapped, and alone. The confederates (Cs) consisted of the author and nine university students who were trained volunteers recruited from the author's methods course. The 10 Cs were formed into five experimental teams with a male playing the victim and a female playing the misinformer in each team. Each team ran 40 trials, with 10 trials in each of the stigma-effort conditions. The design was a 2 (handicap) \times 2 (effort) \times 2 (sex) factorial with 25 Ss per cell.

2. *Handicap*

The handicap was a white medical eyepatch affixed to the victim's eye with two pieces of tape. The eyepatch was highly visible, somewhat unattractive, but not too severe as it should be interpreted as temporary by most Ss. It was felt that this handicap, which was not disabling, would allow a stronger test of the tendency to avoid the handicapped than a more permanent and disfiguring handicap. In the nonhandicapped condition, the victimized Cs removed the patch.

3. *Procedure*

All trials took place on subway platforms where the train was heading to an Eastern Toronto suburb (i.e., away from the city's center). The misinforming C would approach and stand in close proximity to the first naive bystander (S) who stopped at a preselected location on the platform. This procedure, which was instituted to assure relatively random selection of Ss, was only altered to equalize the sexual distribution of Ss.

A second C, the victim, approached the first C and S and, addressing both of them, asked: "Could you tell me if this train goes downtown?" The first C immediately answered yes, misinforming the victim. The victimized

C thanked the misinformer. In the low effort condition, the victimized C remained in the same position, and after several seconds turned to face the tracks, standing almost directly beside the S. In the high effort condition, the victimized C walked down the platform immediately after thanking the misinformer. The victim walked about 10 yards from the S and turned to face the tracks. If the S tried to correct the misinformation immediately in the high effort condition, the victim pretended to be unaware of the S's attempt and simply continued to walk the 10 yards down the platform. Thus, in every high effort trial, the S was compelled to pursue and approach the victim. In all conditions, the misinforming C walked down the platform, in the opposite direction from the victimized C, about 10 seconds after the latter turned to face the tracks. This provided the Ss in both effort conditions the opportunity to help the victim without the misinforming C being present. Each trial was enacted at least one minute before the train was due in the station, and a helping response was counted if the S corrected the misinformation before the train actually stopped at the platform. If the S did not correct the misinformation by this point, the victim left the platform by the closest exit. In all cases the S boarded the train.

C. RESULTS

The results were analyzed by the log-linear method (3, 4) which was designed for the multivariate analysis of qualitative variables. Preliminary analysis showed no significant main effect and no interaction effect of sex on helping ($\chi^2 < 1$); hence the sex variable is not included in the present analysis. Figure 1 presents the log-odds for helping by experimental condition. A log-linear analysis applied to these results showed no main effect for handicap ($\chi^2 < 1$), and the main effect of effort on helping just failed to reach significance ($\chi^2 = 3.82$, $df = 1$, $p < .10$). The latter result was mostly due to a significant interaction effect of handicap and effort on helping ($\chi^2 = 4.90$, $df = 1$, $p < .05$). As can be seen in Figure 1, the interaction shows that the handicapped received significantly greater help in the low effort condition than they did in the high effort condition.

A separate chi square analysis was employed to test the specific prediction that the handicapped would be helped less than the nonhandicapped in the high effort condition. The analysis revealed a significant effect, with 50% of the Ss in the handicap condition and 70% in the nonhandicapped condition helping the victim in high effort ($\chi^2 = 4.17$, $df = 1$, $p < .05$). There was no significant difference in the help given to the handicapped

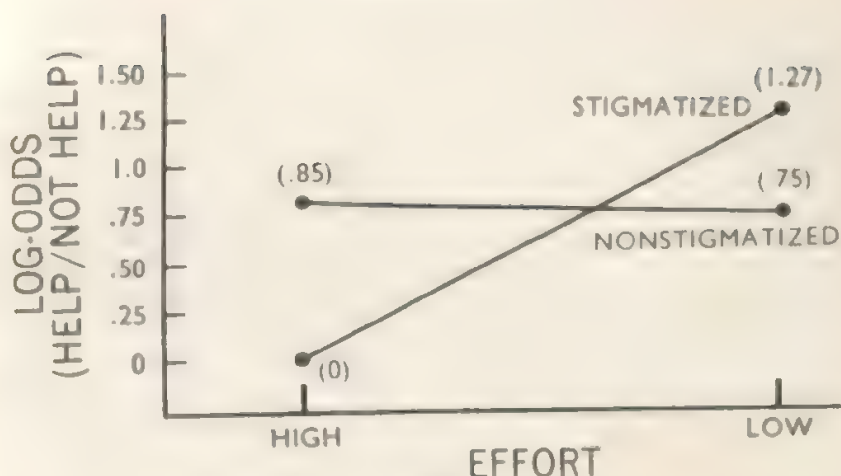


FIGURE 1
LOG-ODDS FOR HELPING BY EXPERIMENTAL CONDITION

(78%) and the nonhandicapped (68%) in the low effort condition ($\chi^2 = 1.27$, $df = 1$).

D. DISCUSSION

The results indicate that when the costs of helping were increased in a face-to-face situation, a stigmatized person was less likely to be helped than a nonstigmatized person. When helping in a face-to-face situation did not involve any additional costs beyond interacting with the victim, there were no differences in the help given to the stigmatized and the nonstigmatized. This latter tendency for people to help the stigmatized and the nonstigmatized at the same rate in face-to-face situations is consistent with the results of several studies (2, 7, 8). Doob and Ecker (2) further found that when helping did not entail future interaction, the stigmatized person received greater help than the nonstigmatized person. Taken together, these studies strongly suggest that the costs of helping are a critical determinant of the rate of help given to the stigmatized. According to the present approach, the desire to avoid a stigmatized other makes a person especially attentive to the costs of helping. The presence of a stigmatized other seems to "amplify" the effects of an increase or decrease in the cost of helping. With a nonstigmatized other, a person appears to be much less sensitive to changes in the cost of helping.

While the present analysis emphasizes the costs of helping, the increased sympathy apparently elicited by the stigmatized raises important issues. An increase in sympathy for the stigmatized would tend to make the costs of not helping them (self-censure, guilt) greater than the costs of not helping the nonstigmatized. To protect themselves against these esteem lowering consequences, persons presumably need to justify their inaction. One reasonable hypothesis is that the victim's circumstances are attributed to something the victim did or failed to do, thereby reducing the person's responsibility for not helping (5). Since the handicap in this study did not incapacitate the victim, *Ss* could have justifiably expected the victim to use the directions posted in the subway station. If blaming the victim is employed to offset the greater costs of not helping the handicapped, some interesting implications follow. For example, when a handicap incapacitates a victim or when responsibility for the unfortunate circumstances cannot be readily attributed to the victim, the person may not be able to reduce his or her personal responsibility, resulting in an increased tendency to help. Thus, even when the costs of helping have been amplified, the rate of help received by the handicapped may still be affected by the nature of the handicap and the attributions made for the victim's circumstances.

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CROSS-CULTURAL CONTACT AND THE DEVELOPMENT OF AN INTERNATIONAL PERSPECTIVE*¹

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SUMMARY

The hypothesis that participants in multicultural educational programs develop an internationally minded orientation, was studied unobtrusively. The focal Ss were 90 alumni of an explicitly structured multicultural program; their controls were 90 alumni of an institution with an implicit multicultural ambience. Ss were sent a questionnaire on a topic with an international perspective. The dependent variables were the return rate of completed questionnaires, and willingness to participate in further research. Although the hypothesis was confirmed—i.e. a greater proportion of focal than control Ss responded—the effect of training was confounded with prior residence abroad, and underlines a basic problem in evaluating the impact of multicultural learning programs, since participants tend to be recruited and selected partly on the basis of previous cross-cultural experience.

A. INTRODUCTION

The growth of educational exchange has been a prominent feature of international relations in the post World War II era. In 1975, the annual worldwide enrollment of foreign students was estimated to be 600,000. The United States is the largest single recipient of foreign students, accounting for approximately one quarter of the total, and four-fifths of all overseas students attend educational institutions in the developed nations (11).

A major aim of educational exchange is the promotion of mutual under-

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² Requests for reprints should be addressed to the first author at the address shown at the end of this article.

standing and international peace, and there is a tendency to regard as self-evident that cross-cultural education does lead to better international relations (e.g., 6, 13). However, remarkably little hard data are available either to substantiate or dismiss the hypothesized link between study abroad and mutual understanding. There are at least five interconnected reasons why evaluation has been neglected.

First, many sponsors and practitioners uncritically believe that cross-cultural contact, particularly at the student level, must be beneficial; so why inquire into the obvious? Second, because of the assumption about the benefits of cross-cultural education, many educational exchange programs have become closely identified with the conduct of a country's foreign policy (e.g., 4, 9). As a result, investigators in this area may have to contend with an uncooperative or hostile establishment, in addition to all of the usual methodological and logistical difficulties associated with field research. Third, the relationship between intergroup contact and intergroup attitudes is enormously complicated. The evidence, expertly marshalled more than 20 years ago by Cook and Selltiz (8), and more recently again by Amir (1), indicates that cross-cultural contact may either increase or reduce intergroup tolerance and understanding, depending on a very large matrix of interacting variables. Fourth, the criterion variable—mutual understanding—is very difficult to isolate, either empirically or theoretically. And fifth, an essential requirement of evaluation research is that it be conducted in the postsojourn phase: i.e., some elapsed time after the students have returned to their country of origin, or in the case of host nationals, left the academic world to participate in society, since the stated aim of study abroad programs is to produce graduates who will serve as links between cultures (12) during their subsequent careers. Unfortunately, all sorts of methodological and practical problems stand in the way of conducting research with *Ss* who are scattered across the face of the globe (2). In sum, a nonsupportive climate, together with the sheer difficulty of the problem, have been major counterinducements to investigators contemplating a research career in this area.

Another neglected variable in the evaluation literature is the host national group: i.e., the students and citizens from the culture in which the foreigners are sojourning. Practically all of the focal *Ss* in the sojourn literature have been visiting students. The occasional host national who does appear is there to fulfill a control function. This imbalance reflects the asymmetrical and euphemistic nature of the "exchange" relation in cross-cultural education. With a few exceptions, such as the institution which

provided the focal setting for the present study, there is usually an implicit assumption, shared by everyone involved (i.e., the students themselves, host and client government agencies, university personnel, etc.), that the primary job of foreign students is to learn, absorb, and adjust, while the primary function of host nationals is to teach, advise, and supervise the transformation of the sojourner. From this perspective, there is little need to study the growth and development of host nationals exposed to foreign students, since none is assumed or expected.

The aim of the present investigation was to explore the hypothesized link between studying and living in a multicultural environment, and acquiring an international perspective. International mindedness was selected as the outcome variable, because it has been identified repeatedly in the literature as a desirable and potentially achievable consequence of cross-cultural contact (e.g., 7, 15, 16, 18, 19, 20). The focal Ss were host national (American) university graduates who had been in contact with foreign students, or exposed to a "foreign" experience. The dependent variables were couched in overt behavioral categories and measured unobtrusively, thereby reducing some of the problems of assessing attitudes that are highly sensitive to considerations of social desirability. 3)

B. METHOD

The Ss were American alumni of the East-West Center (EWC). The Center was established in 1960, is funded mainly by the U.S. Federal Government, and is located on the campus of the University of Hawaii (U.H.) in Honolulu. The aim of the Center is "to promote better relations between the United States and the nations of Asia and the Pacific through cooperative study, training, and research . . . and to foster understanding and mutual respect among people from differing cultures working together in seeking solutions to common problems" (10). Center participants come from 40 different countries and territories, and include established scholars, graduate and undergraduate students, and short term nondegree professional trainees. The overall ratio of non-American to American nationals is two to one. The total number of participants varies with circumstances, but the two dormitories—which are generally fully occupied—have space for 600 residents. The present study was restricted to alumni of the graduate student program. These students spend between two and four years as masters or doctoral candidates at the University of Hawaii, and many develop a close identification with the Center.

The Center does not award degrees. It administers the scholarship scheme and monitors the student's academic development, the latter being the responsibility of the appropriate Department at the University of Hawaii. In addition, the Center actively promotes interculturalism through a variety of administrative and policy measures. For example, roommate assignment is on a mixed culture basis, and participants are encouraged to attend tutorials, seminars, and other formal and informal functions at which cross-cultural understanding is discussed, debated, and sometimes practiced. Thus participants are exposed to gentle, but constant and unrelenting administrative pressure to interculturalize: i.e., to form personal bonds with members of other cultures. However, no obvious sanctions are brought to bear on individuals who choose to ignore these institutional norms. In practice, most participants enter into the spirit of the Center, albeit to varying degrees of intensity.

C. STUDY I

1. *Overview and Rationale*

Ninety American East-West Center University of Hawaii alumni, and 90 American non-East-West Center University of Hawaii alumni were sent a questionnaire, represented as being part of a research program on second language acquisition, and including items on foreign language competence and foreign residence experience. Half of the questionnaires apparently emanated from a University of Hawaii graduate student from California, whereas the other half were sent by a University of Hawaii graduate student from Taiwan. The dependent variable measure was the relative frequency of replies in each of the four cells. It was reasoned that if American students at the Center do become (and remain) more world minded as a direct consequence of their exposure to EWC program activities, then they should be more willing to participate in research with an international perspective, than an appropriate control group. Furthermore, if the programs were successful in reducing ethnocentrism, then it should make no difference whether the appeal came from a conational or a foreigner, hence the inclusion of the two source conditions in the design.

The primary function of the control group was to rule out the most plausible rival hypothesis for such an outcome: namely, that EWC participants already have an international outlook prior to arriving at the Center. University of Hawaii alumni were chosen to serve as controls, because UH is probably the most cosmopolitan major tertiary institution in the United

States, and would therefore tend to attract the same sorts of "mainland" U.S. students as the East-West Center. The design included an internal check on this assumption. All of the Ss in this study shared common membership in the University of Hawaii academic community. Thus, they all came under the influence of the implicit multicultural ambience which pervades every aspect of campus life at UH. EWC students were additionally exposed to an explicit and structured program of culture learning, and it is the effect of this latter influence that the present study attempted to evaluate.

2. Method

a. *The instrument* The instrument consisted of two items. The first was a letter. In the top right hand corner appeared the date, and the return address, which was a house number on a suburban Honolulu street. The text was as follows. "Dear . . . I am a graduate student from (California) (Taiwan), studying for a Master's degree at the University of Hawaii. I am conducting research in the area of second language acquisition, and I would be grateful if you could help me by filling out the enclosed questionnaire and returning it to me. Thank you for your assistance. Sincerely, (Ms. Beverly McLeod) (Ms. Anli Lin)." Both letters were signed, the signature in the Taiwan condition consisting of three Chinese characters.

The second item was the questionnaire. It was labelled "Language Acquisition Inventory," and contained six questions: Ss were asked 1) to list all the languages they knew, and to estimate their respective listening, speaking, reading, and writing competence on a four point scale (excellent, good, fair, or poor); 2) to list all the foreign countries in which they had lived for more than six months, and the dates and purpose of residence; 3) to list all the foreign countries which they had visited, not including the countries they had lived in, and the dates; 4) to give their educational history, beginning with high school; 5) whether they would be willing to participate in another study at a later date, and they were given a yes/no response choice; and 6) if they were willing to participate in another study, to supply their name and address. (Otherwise, the questionnaire remained anonymous, and there was no pressure on Ss to disclose their identity).

Each of the six questions appeared in its own box. Appropriately ruled horizontal and vertical lines gave the questionnaire a professional appearance. The inventory concluded with the message: "Thank you for your help. Please return this form to (Ms. Beverly McLeod) (Ms. Anli Lin)," followed by the Honolulu return address. Deliberately, neither a return-addressed

envelope, nor a stamp were provided, thereby increasing slightly the "cost" to the Ss of responding to the appeal. Each questionnaire carried an unobtrusive code (Form A1, Form A2, etc.), which identified its experimental condition. The instrument was sent in a plain envelope, carrying only the return address in the left hand corner, and the appropriate postage stamp. Thus there was nothing about the instrument that could associate it with the East-West Center.

b. Subjects and design. The design of the study can be read from Table 1. Ninety EWC/UH, and 90 non-EWC/UH graduates were randomly selected from the alumni records of these institutions. All Ss had completed a higher degree. Individuals were eliminated from the pool if their address was incomplete, if their sex was not clearly inferable from their given name, if they had received their degree prior to 1965, if they were acquainted with either of the two Es, and if they were employed either by the East-West Center or the University of Hawaii.

Three sets of subsamples were drawn from the pool complying with the above criteria: (a) sixty Ss were Hawaiian "haole"—i.e., persons with a Hawaii address and a name that identified them as being racially caucasian (although the correlation between type of surname and race among Hawaii residents is not perfect, it is high enough to provide a viable means of clustering Ss by ethnic categories); (b) sixty Ss were domiciled in California; and (c) sixty Ss were domiciled on the East Coast of the United States. The purpose of drawing explicit regional subsamples was to prevent any confounding resulting from a particular geographic area being either more or less helpful and/or cosmopolitan. Also, the three regions comprise the main catchment area for American EWC participants.

Equal numbers of males and females were chosen from each geographic area, and distributed across the conditions so that each of the 12 cells was reasonably balanced for sex. Finally, half of the Ss in each alumni \times region condition received the questionnaire from Beverly McLeod, and the other half from Anli Lin.

3. Results and Discussion

As Table 1 shows, the overall response to the appeal (50 out of 180, or 28%) was at about the average rate for mailed questionnaires (17). The source of the appeal (Californian or Taiwanese graduate student) had no effect on the return rate. There was some variability in the regional returns, but these data are difficult to interpret. The main outcome relates to the predicted differences in the reply rate of UH/EWC *versus* UH/non-

TABLE 1
STUDY I: NUMBER OF QUESTIONNAIRES RECEIVED IN EACH CONDITION

Source of questionnaire	Disposition of questionnaires	East-West Center				University of Hawaii			
		Hawaii	California	East Coast	Σ	Hawaii	California	East Coast	Σ
Californian graduate student	Σ returned to sender by P.O.	2	2	1	5	2	2	2	6
	Σ net sent	13	13	14	40	13	13	13	39
	Σ replied	3	2	10	15	2	3	4	9
	% replied from net sent	23%	15%	71%	38%	15%	23%	31%	23%
Taiwanese graduate student	Σ returned to sender by P.O.	4	2	1	7	5	1	2	8
	Σ net sent	11	13	14	38	10	14	13	37
	Σ replied	3	9	5	17	2	5	2	9
	% replied from net sent	27%	69%	36%	45%	20%	36%	15%	24%
Total and χ^2	$\Sigma \Sigma$ net sent				78				76
	$\Sigma \Sigma$ replied				32				18
	$\chi^2 = 4.52, df = 1, p < .05.$								50

Note: 15 questionnaires were sent in each cell.

EWC alumni. These data are summarized at the bottom of Table 1, and show that a significantly greater proportion of EWC than UH alumni filled out and returned the questionnaire, thereby indicating that EWC alumni were more interested in the topics listed in the questionnaire, and more willing to help with research in this area. Thus on the face of it, the results warrant the tentative conclusion that EWC alumni are more internationally minded than their UH peers, and that this effect can be attributed to participation in the Center's culture learning programs. However, this conclusion can be challenged on at least two grounds, which illustrate two of the major problems on which evaluation research usually founders. The first is the criterion problem, and the second is the lack of an adequate before-treatment or baseline measure.

a. The criterion problem. Being considered a cosmopolitan nonethnocentric and world-minded individual carries high social desirability, particularly among young graduates. Consequently, a direct and transparent inquiry in this realm is likely to produce data that are inflated by normative pressures. One solution is to employ an oblique approach, such as the method used in the present study. Thus the content of the questionnaire was carefully selected to trigger off internationally oriented feelings and concerns, without at the same time making it too obvious that this was the intent. Unfortunately, as the obliqueness of a measure increases, its face validity relative to the criterion tends to diminish. Clearly, a happy medium is of the essence, but it is often difficult to determine, without extensive pretesting, where that medium lies. The problem is not unique to evaluation research, but is exacerbated by the ill-defined nature of the criterion variables in this field. The ideal solution is to adopt a multimethod approach (5), but most studies, including the present one, cannot marshal the necessary resources. In practice, internal analyses are often substituted for the more desirable method of multiple corroboration (14). In the present case, an internal analysis provided the basis for the design of a further study to explain the obtained results.

b. The baseline problem. For the sake of argument, let us accept that the measure employed in the present study adequately represented the criterion, and that therefore EWC alumni can be regarded as being more internationally minded than their UH peers. By itself, this concession still does not imply that the difference can be attributed solely or even partially to the Center's program activities. Before such a conclusion can be sustained, it is necessary to rule out the possibility that the students already were world minded prior to coming to the East-West Center, or somehow

to partial out the effect of pretreatment levels in this variable. The problem cannot be evaded because institutions such as the EWC explicitly select participants on the basis of factors compatible with their aims and charter. Thus applicants who show evidence of an international perspective are more likely to be offered an award than applicants with no such history. There is no evidence to suggest that the same bias enters into the selection of University of Hawaii graduate students. Consequently, short of the use of a longitudinal design, the only truly appropriate control group for evaluating EWC programs would be individuals who had satisfied all the selection criteria but had not been offered a place. Unfortunately such individuals could not be located, and an acceptable substitute group had to be found. Although the university does not recruit its students for their world-mindedness, there is a tendency for students who choose the University of Hawaii to be self-selected on this variable. Thus it seemed reasonable to use UH alumni as surrogate controls. Nevertheless, it still cannot be assumed that UH and EWC graduates are identical with respect to the crucial baseline variable. However, the matter can be put to an empirical test, and the design included an internal check on the relative pretreatment status of the two groups.

c. Internal analysis. To check on the criterion validity of the measure, and on the presence of confounding variables, the data were scrutinized for any signs relevant to either issue. This analysis revealed a major difference between the two groups of respondents. Of the 32 EWC alumni returning the questionnaire, 30 (or 94%) had previously resided in a foreign country, whereas only four out of the 18 UH respondents (or 22%) had a prior history of foreign residence. This difference is highly significant ($\chi^2 = 23.90$, $df = 1$, $p < .001$), and speaks well to the criterion problem. However, the finding is disastrous as far as the baseline problem is concerned, since it can plausibly account for the main outcome of the study (viz., that a greater proportion of EWC than UH alumni filled out and returned the questionnaire), and thereby demonstrated their international perspective, not because of Center program activities, but as a consequence of their earlier, pre-Center experiences abroad.

A further analysis revealed a nonsignificant association between having lived in a foreign country, and agreeing to participate in another study (item 5 in the questionnaire). Overseas residence thus emerged as a major contributor to the variance in the dependent variable. To investigate this hypothesis *ante hoc*, a second study was conducted, in order to test specifically whether Ss who had lived abroad would be more willing to engage

in further research than Ss with no history of foreign residence. To maintain comparability with the first study, the same method was employed. However, the Ss were all University of Hawaii alumni. There were three reasons for drawing a sample exclusively from that institution. First, the previous study had shown that most EWC students have prior overseas experience. Consequently, it is unlikely that there would have been sufficient respondents without such experience to provide usable data against which to contrast the focal condition. Second, the aim in any case was to consider the effect of overseas residence unconfounded by attendance in an explicitly multicultural academic institution. Third, again using UH alumni kept the implicit multicultural ambience of the educational institution constant across the two studies, a vital element in making the two sets of data comparable.

D. STUDY II

1. *Method*

An additional two hundred Ss were randomly drawn from the alumni records of the University of Hawaii, using the same criteria that were employed in selecting participants for the first experiment. The design can be read from Table 2. Five sets of subsamples were drawn, with 40 Ss in each group, balanced for sex: (a) Hawaiian "haoles," i.e., persons with a Hawaii address and a name that identified them as racially caucasian; (b) Hawaiian Chinese, or persons with a Hawaii address and a name that identified them as being of Chinese descent; (c) Hawaiian Japanese, or persons with a Hawaii address and a name that identified them as being of Japanese origin; (d) persons domiciled in California; and (e) persons domiciled on the East Coast of the United States. Half of the Ss received the questionnaire from Beverly McLeod, and the other half from Anli Lin.

2. *Results and Discussion*

As Table 2 shows, the overall response to the appeal (43 out of 200, or 22%) was a little below that of the first study, but still well within the limits of providing a usable data matrix. The percentage of net replies is practically the same as the rate in the parallel (University of Hawaii) condition in Study I. Neither the regional nor the source manipulations had a significant or an interpretable effect. The main outcome relates to the predicted association between having a history of overseas residence, and saying "Yes" to item 5 in the questionnaire ("Would you be willing to participate in another study?"). A significantly greater proportion of Ss

TABLE 2
STUDY II. NUMBER OF QUESTIONNAIRES RECEIVED IN EACH CATEGORY

Source of questionnaire	Disposition of questionnaires	Location of respondents				
		Hawaiian haole	Hawaiian Chinese	Hawaiian Japanese	California	East Coast
Californian graduate student	Σ returned to sender by P.O.	4	0	6	2	4
	Σ net sent	16	20	14	18	16
	Σ replied	4	5	3	5	2
	% replied from net sent	25%	25%	21%	28%	13%
Taiwanese graduate student	Σ returned to sender by P.O.	2	1	2	1	5
	Σ net sent	18	19	18	19	15
	Σ replied	5	5	2	8	4
	% replied from net sent	28%	26%	11%	42%	27%
Total	$\Sigma \Sigma$ net sent	34	39	32	37	31
	$\Sigma \Sigma$ replied	9	10	5	13	6
	% replied from net sent	26%	26%	16%	35%	19%

Note: 20 questionnaires were sent in each cell.

(83%) with foreign living experience agreed to the request than Ss (17%) who had never lived abroad ($\chi^2 = 3.80$, $df = 1$, $p < .05$, one-tailed).

E. CONCLUSION

Taken together, the two studies indicate that a history of having lived abroad is a significant determinant in the development of an international perspective, as measured by varying degrees of willingness to participate in research with cross-cultural connotations. This finding underlines one of the major problems of evaluation research: many of the participants in explicitly designed multicultural living programs are selected precisely because they already have had some prior multicultural exposure. This is certainly true of host nationals in American institutions like the East-West Center, and probably applies equally to many of the foreign students, suggesting that the main effect of these programs is to maintain and expand an already existing cross-cultural orientation, rather than creating a new set of attitudes. To some extent, then, institutions such as the East-West Center tend to preach to the converted. This does not detract from their value, since even the devout need to be reminded of their duties from time to time. However, by the same token, these institutions are probably not making their impact in the area of greatest need: i.e., they are not reaching the ethnocentric and chauvinistic sections of society.

The methodological implications of the present study for sojourn evaluation are that experimental designs must explicitly take into account the variable of past cross-cultural experience, and not confound this condition with the program or treatment variable. In turn, this may draw attention to the need for a theory of international mindedness that includes past life experiences, as well as contemporary training programs. Finally, the studies underline a dilemma for the practitioner in cross-cultural education: given that the aim is to make the greatest possible contribution to international peace and understanding, should institutions select "suitable" participants (i.e., persons already broadly in sympathy with the aims of the program), or should they deliberately endeavor to recruit individuals who are chauvinistic, ethnocentric, and prejudiced? Or a judicious mix of both types of persons?

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INTERPERSONAL PROXIMITY AND IMPRESSION FORMATION: A PARTIAL EXAMINATION OF HALL'S PROXEMIC MODEL^{*1,2}

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SUMMARY

Interpersonal proximity was examined as a cue in impression formation by varying factorially four interpersonal distances (2', 3¼', 5½', 9½'), sex of S (48 male and 48 female American college students), and sex of C (three male and three female students). Interpersonal proximity in the interview situation did not directly affect Ss' impressions of the Cs as measured by the Gough and Heilbrun Adjective Check List and Schutz's FIRO-B test. Although the four distances operationalized two of the interpersonal distance zones in Hall's normative model of human spatial behavior, Ss did not report the expected differences in the experiences of these two zones. The implications of the present findings for the limited role of interpersonal proximity as a cue in impression formation and for Hall's model are discussed.

A. INTRODUCTION

In *The Hidden Dimension*, Edward T. Hall (8) described four normative distance zones (each having a near and a far phase) used by American adults interacting with one another. He argued that "the regularity of distances observed for humans is the consequence of sensory shifts" (8, p. 133) that define the zone boundaries and account for the unique phenomenological experience of each zone. In the intimate zone (0-1 ½'),

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sensory inputs are characterized by their high intensity and unusual variety (e.g., thermal, tactile, olfactory), producing in each interactant a silent feeling of physical involvement with an unmistakably present other person. The personal zone (1 ½-4') is like a mobile territory, is used for discussing personal but not intimate topics with those we know rather well, and allows for physical contact and a moderate level of sensory activity. The social zone (4-12') is used for those we do not know well and whom we treat rather formally. For example, impersonal business transactions and other formal exchanges occur in this zone. The public zone (beyond 12') is characterized by low levels of sensory input. Communication acts in this zone are always quite formal and usually one-way—e.g., a concert or lecture—and are more presentation and observation rather than genuine interaction.

Hall's (8) model has stimulated much research on interpersonal spacing as an integral aspect of human social behavior (4, 14). Most studies have treated it as a dependent variable. Typically *Es* have manipulated environmental and participant characteristics that define the situation and then have measured the resulting interpersonal distances (3, 19). Unfortunately, this approach does not assess how participants perceive the different distances and zones and use them for communicative and regulatory purposes.

This methodological limitation has been avoided by the relatively fewer studies that used interpersonal proximity as an independent variable. For example, the invasion procedure—in which people are approached closely for no apparent reason and in violation of implicit cultural norms—has revealed that people flee from proximity [invasion (6, 17)]. Evidently, extreme interpersonal proximity can be highly arousing and thus noxious in many social settings (11, 12).

Subsequent investigations have focused on the informational value of interpersonal distance and have provided rather confusing results. Albert and Dabbs (1) conducted an attitude change experiment in which the speaker-listener distance and the speaker's manner were varied factorially. Their *Ss'* impressions of the speaker were unrelated to proximity, except that perceived expertise was greatest at the medium (social zone) distance. Patterson and Sechrest (13) had college students interview another student (actually a *C*) at a distance of two, four, six, or eight feet. As the *C* entered the room in which the *S* waited, *S* quickly and unobtrusively rated *C's* degree of friendliness, aggressiveness, dominance, and extraversion. The results indicated that interpersonal distance and the combined ratings were negatively correlated. In contrast, Porter, Argyle, and Salter (15) failed to

find any significant distance effects on the 21 scales used by high-school aged boys to rate male graduate students whom the boys interviewed at distances of two, four, and eight feet.

The present experiment was designed to investigate interpersonal proximity as a cue in impression formation. It was assumed that the regulatory or communicative aspects of human proxemic behavior are revealed in what one person attributes to another person as a function of the latter's use of relational space. It was also assumed that interpersonal distances are meaningful cues only in relation to the cultural norms for interpersonal proximity. With the exception of Albert and Dabbs' (1) attitude change study, the experiments previously discussed apparently used distances that were procedurally convenient [e.g., a row of chairs in the classroom (13)] rather than theoretically meaningful. These distances may well have been ambiguous cues: in Hall's model, for example, the four foot distance is the boundary between the personal and social zones. The present study avoided this problem by choosing distances which operationalized two of the four normative distance zones. The four distances represented the midpoints of the personal-near ($2'$), personal far ($3\frac{1}{4}'$), social-near ($5\frac{1}{2}'$), and social-far ($9\frac{1}{2}'$) zones. The use of these distances also permitted an examination of Ss' experiences of the personal and social zones. If each distance zone is a relatively unique sensory experience, as Hall argues, then Ss who interview another person in the personal distance zone ($2'$, $3\frac{1}{4}'$) should report different interaction experiences than Ss who conduct interviews at social zone distances ($5\frac{1}{2}'$, $9\frac{1}{2}'$). The finding of reported experiential differences could be used to assess the psychological assumptions of Hall's model.

B. METHOD

1. *The Experimental Setting*

The experiment was structured as an interview in which each S questioned another student (C) about his or her opinions about a campus issue, standard *versus* pass-fail grading. The interview was conducted in a large room containing 12 chairs arranged in a circle. On the pretext that E would be observing the interviewee (C) during the session, each S was seated in the chair immediately below and facing away from a one-way mirror. The other chairs were all oriented toward this chair. For each session, one of the six Cs sat in one of the four chairs placed at the critical distance from

the S's chair. The remaining seven chairs were used only to complete the circular arrangement.

2. *Subjects*

The Ss were 48 male and 48 female students from introductory psychology courses who participated in experiments as part of their course requirements. When they appeared for the experiment, they were randomly assigned to distance conditions. Seventeen additional Ss were excluded from the sample: 10 were acquainted with their Cs and seven altered the interview questions. No S's data had to be excluded because he/she moved his/her chair or changed to another one.

3. *Confederates*

Three male and three female students served as Cs. They enacted the role of a student from an advanced psychology course who had volunteered to be interviewed about a campus issue. Their task was to sit at the critical distance (orienting themselves as directly as possible toward S), to maintain a pleasant manner, and to give the standard answers to the S's standard interview questions. Each C was interviewed individually by each of 16 Ss: that is, by two Ss of each sex at each of the four distances.

The experiment required the standardization of several aspects of C behavior. Extensive training was conducted to insure that all Cs used the same posture (leaning against the chair back, the leg farther from S crossed over the nearer one, hands in lap or on thighs), the same pattern of eye contact [watching S's face as he or she asked a question, looking away while answering the question, and re-establishing eye contact at the end of each answer to signal readiness for the next question; based on Kendon's (9) description of the monitoring function], similar vocal behavior, and similar styles of dress (campus casual, but not sloppy). The experiment was not begun until two independent judges, using a comprehensive checklist of C behaviors, agreed that each C's behavior was highly consistent (90%) across the four distances and that all Cs behaved similarly (90% consistency) to one another across all four distances. To maintain this behavioral consistency over the course of the experiment, E monitored each interview and Cs rated their own performances on checklists disguised as a questionnaire.

4. Independent Variables

The independent variables of interpersonal proximity (2', 3 ¼', 5 ½', 9 ½') sex of *S*, and sex of *C* constituted a $4 \times 2 \times 2$ fixed-effects factorial design in which the individual *C*s were nested within the sex of *C* variable.

5. Procedure

Each *S* was seated in the standard chair and informed that the experiment was intended (a) to determine student opinion about the two grading systems and (b) to investigate the impression formation process. *E* explained that the opinion data would be obtained from a recording of the interview and that *S*'s impression data would be compared with *E*'s systematic observations through the one-way mirror. *S* and *E* rehearsed *S*'s interview procedure and the 12 prepared questions he was to ask *C*. *S* was then allowed to examine superficially the two impression measures he was to complete after the interview. These measures were a modified version of Schutz's (16) Fundamental Interpersonal Relations Orientation—Behavior test and the Gough and Heilbrun (7) Adjective Check List.

E then left the room, returned with *C*, and introduced the two students to one another, carefully discouraging anything more than a perfunctory greeting. He asked *C* to be seated, handed him/her a questionnaire (the standardization checklist), turned on the tape-recorder, and left the room.

S then spent three or four minutes asking *C* the 12 prepared questions and receiving the prepared answers. At the end of the interview, *S* instructed *C* to complete the questionnaire given to him by *E* and proceeded to complete the two impression measures.

When both participants completed their tasks, *S*, as instructed by the interview protocol, dismissed *C*. At this time, *E* returned and asked *S* to complete the Interaction Experience Questionnaire. When *S* was finished, he was carefully and systematically debriefed by *E* to assess the success of the deceptions and to identify and probe any suspicions about the experiment or *C*. All *S*s were informed about the deceptions, the reasons they were used, and the true purpose of the experiment.

6. Dependent Variables

Previous research on proxemic behaviors has indicated that the interpersonal needs measured by Schutz's (16) Fundamental Interpersonal Rela-

tions Orientation—Behavior (FIRO-B) test may be important determinants of an individual's behavioral style (2, 5, 14). The FIRO-B uses *S* agreement with items describing specific behaviors to measure three interpersonal needs, each having an expressed behavior and a wanted behavior component: inclusion—being *in* or *out* of a relationship, control—being *on the top* or *at the bottom* of a relationship's power distribution, and affection—being *close to* or *far from* a valued other person. On the basis of pilot experiments, the items were rewritten in the third person singular to facilitate *Ss'* judgments of the extent they perceived *C* as needing and expressing inclusion, control, and affection.³

Because several of its 24 dimensions are similar to the dimensions used in other studies or are consistent with Schutz's (16) definitions of the FIRO needs, the Gough and Heilbrun (7) Adjective Check List (ACL) was used as the second impression formation measure. The ACL consists of 300 alphabetically listed adjectives from which respondents choose those that best describe the target person—in this experiment, *C*. Only 11 of the 24 possible dimensions were scored: Total number of adjectives checked, number of favorable adjectives checked, self-confidence, personal adjustment, achievement, dominance, affiliation, exhibition, autonomy, aggression, and deference.

To identify the experiential differences between the personal (2', 3 ¼') and social (5 ½', 9 ½') zones, an Interaction Experience Questionnaire was constructed to measure *Ss'* perceptions of and reactions to their interview situations. In a pilot study, 10 adults, all unfamiliar with the present experiment, read Hall's (8) descriptions of the personal and social zones and listed adjectives they believed characterized each zone. From these lists, 14 pairs of polar adjectives were chosen such that one adjective in each pair was selected from the personal zone lists and the other from the social zone lists. These 14 adjective pairs constituted the Interaction Experience Questionnaire for this experiment. Each *S* indicated on a seven-point scale which adjective in each pair better described his interview situation, as opposed to his interviewee. Scale values less than 4 indicated a preference for the personal zone adjective, and values greater than 4 a preference for the social zone adjective as being more descriptive of *S's* proxemic experience.

³ Reproduced and used by special permission from *FIRO-B* by William Schutz, Ph.D. Copyright 1957. Published by Consulting Psychologists Press, Inc.

C. RESULTS

A critical methodological feature of this experiment was the standardization of *C* behavior. If the standardization were inadequate, the assumption that *S*s responded only to the distance and sex of *C* factors would not be justified. Fortunately, it was adequate. The factor of *C*'s nested within sex of *C* was statistically significant only for the FIRO-B expressed inclusion dimension [$F(4, 48) = 4.35, p < .01$] and the ACL exhibition dimension [$F(4, 48) = 2.71, p < .05$]. Further examination of the appropriate means and the intercorrelations of all the FIRO-B and ACL variables (obtained from a multivariate analysis) revealed that these two effects did not reflect systematic interconfederate differences and thus did not preclude further interpretation of the data.

*S*s' judgments of the *C*s in terms of the six FIRO-B need components were not directly affected by interpersonal proximity. This absence of proximity affects was surprising in that, for each FIRO-B variable, the largest mean occurred at either 3 ¼ or 5 ½ feet and the smallest mean at either 2 or 9 ½ feet (Table 1). This suggestion of curvilinear relationships was not, however, supported by trend analyses for the unequal interval distances.

Only the *S* sex factor produced significant main effects on *S*s' FIRO-B responses. Compared to female *S*s, male *S*s attributed more wanted inclusion [5.0 *vs.* 3.4, $F(1, 48) = 7.0, p < .05$], more expressed affection [4.0 *vs.* 2.8, $F = 4.1, p < .05$], and more wanted affection [4.7 *vs.* 3.4, $F = 5.0, p < .05$] to *C*s, regardless of *C* sex. Male and female *S*s also differed in their attributions of wanted control to the *C*s, as revealed by the significant Sex of *S* and *C* interaction [$F(4, 48) = 2.9, p < .05$]. Male *S*s attributed more wanted control to two of the male and one of the female *C*s (4.4, 4.4, and 4.3, respectively) than to the remaining male and two female *C*s (2.0, 2.4, 2.2, respectively). Female *S*s also tended to differentiate these two groupings but reversed the pattern of attributions. They perceived the male and two female *C*s as displaying slightly more wanted control behavior (3.2, 3.3, and 2.9, respectively) than did the remaining two male and one female *C*s (2.6, 2.5, and 2.2, respectively).

Evidence for proximity effects was obtained from the significant interaction of the distance, *S* sex, and *C* sex factors for the expressed control dimension [$F(3, 48) = 3.5, p < .05$]. When *S*s and *C*s were both male or both female, attributions of expressed control increased as proximity decreased (1.5 at 2', 3.2 at 3 ¼', and 4.7 at 5 ½'), except for the largest

TABLE 1
MEAN FIRO-B AND ADJECTIVE CHECK LIST SCORES AT EACH OF THE FOUR DISTANCES

Variable	Personal zone Ss			5½'			Social zone Ss		
	M	SD	M	SD	M	SD	M	SD	
FIRO-B									
Expressed inclusion	4.54	1.24	5.79	1.00	5.25	1.65	5.42	1.06	
Wanted inclusion	4.04	2.06	4.25	2.24	4.75	3.18	3.46	2.65	
Expressed control	2.63	1.59	2.79	2.18	3.71	2.30	3.25	1.65	
Wanted control	2.83	.94	3.13	1.83	3.04	1.71	2.92	1.53	
Expressed affection	3.54	2.18	3.83	2.12	3.29	2.71	2.75	2.36	
Wanted affection	4.54	2.30	3.75	2.59	4.63	3.24	3.46	2.65	
Adjective Check List									
Total number adjectives checked	45.29	18.56	41.88	14.08	46.58	16.97	50.33	23.81	
Number of favorable adjectives checked	27.67	10.25	24.54	7.72	28.54	13.14	31.79	12.55	
Self-confidence	4.75	3.30	4.04	1.94	4.21	4.18	4.92	3.89	
Personal adjustment	7.63	3.36	6.54	3.12	7.38	3.36	8.54	3.12	
Achievement	6.96	3.71	6.58	2.95	7.92	4.24	7.84	3.65	
Dominance	7.00	4.24	6.83	4.36	7.79	5.48	9.00	4.36	
Affiliation	9.63	3.59	8.54	2.06	10.25	5.77	11.25	5.54	
Exhibition	-.29	2.65	-.04	1.47	.13	2.18	.50	2.24	
Autonomy	.13	1.83	-.04	2.30	.92	1.89	.29	2.65	
Aggression	-7.88	3.83	-6.54	3.36	-7.58	4.12	-8.42	4.60	
Deference	2.29	2.53	1.58	2.36	1.92	3.06	1.38	2.42	

Note: $N = 24$ at each distance. FIRO-B scores ranged from 0 to 9, with higher scores denoting greater attributions of the variables. For the Adjective Check List, higher mean values denote greater attributions of the variables.

distance (2.7 at 9 1/2'). When Ss and Cs were opposite sexes, greater attributions of expressed control were made at the extreme distances (3.8 at 2' and 3.9 at 9 1/2') than at the moderate ones (2.4 at 3 1/4' and 2.8 at 5 1/2'). Apparently, Ss perceived opposite-sex Cs who sat very close to or very far from them and same-sex Cs who sat a moderate distance from them as being similarly manipulative.

Consistent with the FIRO-B results, the analyses of the 11 ACL variables also failed to yield significant main effects for interpersonal proximity. Examination of the mean values of each variable for the four distances (Table 1), however, revealed that the smallest mean values usually occurred at the 3 1/4' distance and the largest ones usually occurred at the 9 1/2' distance. Again, trend analyses for the unequal interval distances did not support the suggested curvilinear relationships.

In contrast to the FIRO-B results, there were no significant main effects for sex of S on any of the ACL variables. Male and female Cs were, however, perceived differently. Compared to the female Cs, the male Cs were perceived as being more self-confident [3.5 *vs.* 1.1, $F(1, 48) = 4.6$, $p < .05$], less dominant [6.9 *vs.* 9.4, $F = 5.1$, $p < .05$], and less aggressive [-9.1 *vs.* -5.7, $F = 14.1$, $p < .001$]. On the exhibition, autonomy, and deference dimensions, there were significant interactions of the S and C sex factors in addition to S sex main effects. Compared to the female Cs, the male Cs were perceived as being less exhibitionistic [-.6 *vs.* 1.0, $F = 10.8$, $p < .01$] and less autonomous [-.6 *vs.* 1.2, $F = 11.1$, $p < .01$] but more deferent [2.8 *vs.* 1.2, $F = 10.6$, $p < .01$]. In each case, male Ss were more extreme in their differential perceptions of the male and female Cs than were the female Ss [exhibition, $F(1, 48) = 5.1$, $p < .05$; autonomy, $F = 4.5$, $p < .05$; deference, $F = 4.6$, $p < .05$].

A significant three-way interaction [$F(12, 48) = 2.0$, $p < .05$] for the distance, S sex, and C factors for the autonomy variable was complex and not easily interpreted. Although the interconfederate variance was large, female Cs received slightly positive mean ratings for autonomy, while male Cs received slightly negative ones. Also, Ss who interviewed a same-sex C attributed less autonomy to the C at all distances than did Ss who interviewed an opposite-sex C.

Surprisingly, Ss' responses on the Interaction Experience Questionnaire were very consistent. Both the personal zone (2', 3 1/4') and social zone (5 1/2', 9 1/2') Ss described their interview situations quite similarly (Table 2), differing only in their responses to the personal-social and the warm-cold adjective pairs. Although both groups judged their interview situations to

TABLE 2
MEAN INTERACTION EXPERIENCE QUESTIONNAIRE SCORES FOR PERSONAL AND SOCIAL
ZONE SUBJECTS

Adjective pair ^a	Personal zone Ss	Social zone Ss	<i>t</i>
Informal-formal	4.81	4.56	.28
Involved-uninvolved	4.63	4.94	1.33
Tense-relaxed	4.89	4.91	.02
Aggressive-passive	5.06	5.04	.02
Active-inactive	4.77	4.65	.63
Interesting-boring	3.92	4.06	.74
Friendly-hostile	2.98	3.02	.34
Confident-shy	3.87	3.87	.00
Personal-impersonal	5.06	4.79	1.35
Personal-social	4.25	4.85	2.12*
Warm-cold	4.23	3.83	2.48*
Close-distant	4.73	4.75	.11
Emotional-unemotional	5.54	5.42	.67
Pleasant-unpleasant	3.27	3.17	.83

^a The first adjective in each pair was derived from the personal zone description and scored as 1 and the second adjective was derived from the social zone description and scored as 7.

* $p < .05$, $df = 94$.

be social rather than personal (means were greater than 4), the social zone Ss were more extreme in their judgment. The responses to the warm-cold adjective pair were contrary to the model: the personal zone Ss judged their interview experiences as being cold rather than warm, and the social Ss found their experiences warm rather than cold. The fact that both groups preferred the social adjective in 10 of the 14 adjective pairs suggests that the interview situation was essentially an impersonal experimental setting that provided Ss with rather homogeneous experiences.

D. DISCUSSION

The hypothesis that interpersonal proximity is a significant cue in impression formation was not supported by the data. An interviewer's impression of his interviewee, as reported on the ACL and modified FIRO-B instruments, was not affected simply by the distance between them during their interaction. In general, Ss' impressions of the Cs were a function of the sexes of the interactants. Only on the FIRO-B need component of expressed control and possibly on the ACL autonomy dimension were the attributions related to interpersonal proximity.

The absence of direct effects for interpersonal proximity in this study is consistent with the results of experiments by Albert and Dabbs (1) and by Porter, Argyle, and Salter (15). In all three procedures, Ss rated Cs after conversing with them for a few minutes. In contrast, Patterson and Sech-

rest (13) obtained proximity effects when Ss rated Cs just before they interviewed them. In their procedure, proximity effects occurred apparently because the distance cue was relatively salient and independent from other cues. In the other three procedures, distance was but one early cue among several either immediately available or generated during the brief interactions. If this interpretation is correct, interpersonal proximity in the present situation did not directly affect impressions because, with one exception, it did not interact with the more salient and informative concomitant and subsequent cues.

An alternative explanation for the absence of proximity effects in this experiment would be the inadequacy of the measures intended to detect them. This possibility is, however, inconsistent with the finding of a significant three-way interaction on the expressed control dimension of the modified (thus, perhaps, less adequate) FIRO-B instrument. Although the two impression measures did yield some possibly inconsistent findings on conceptually similar dimensions (e.g., FIRO-B control and ACL dominance), the interaction effect and the results of pilot studies support the adequacy of these instruments for this procedure.

The probable nonsalience of the proximity manipulation and the resulting absence of direct proximity effects preclude any discussion of Schutz's (16) FIRO theory as a supplement to Hall's model of human spatial behavior. Although other researchers (2, 5) have obtained proxemic and social behaviors linked to FIRO needs, the present data do not support any integration of the two conceptual systems.

Another important aspect of this experiment was the similarity of responses by the personal zone and the social zone Ss to the Interaction Experience Questionnaire. Although the proximity manipulation did not directly affect the impression measures, the two zones should still have given the two groups of Ss qualitatively different sensory and perceptual experiences. Hall's model assumes that each proximity zone is defined by a fairly unique set of sensory and perceptual qualities and that these are a direct function of interpersonal distance. If this were so, then the personal and social zone Ss should have had different proxemic experiences and should have revealed them by preferring opposite adjectives on the questionnaire. The absence of such differences may indicate that factors other than interpersonal proximity were more potent determinants of the interaction experience.

A re-examination of the experimental procedure supports the above interpretation. The interview topic of standard *versus* pass-fail grading was

a relatively impersonal one, even for students. It may have been even more impersonal for an interviewer who carefully asked a stranger prepared questions and who was concerned about doing the interview procedure exactly as instructed. These impersonal, formal, and structured qualities of an interview between strangers may have defined the interaction context as impersonal. Given this context, the social zone would be normatively appropriate (10). The Ss probably responded to the questionnaire according to their perceptions of its context—a minimally personal, staged conversation with a stranger in a psychology laboratory area—rather than the subtle and temporary proximity information.

The context explanation is also consistent with several of the findings. On 10 of the 14 adjective pairs on the Interaction Experience Questionnaire, most Ss, regardless of zone condition, tended to prefer the social zone adjective as more descriptive of their experiences. Also, given the impersonal situation and the usual sex-role expectations, the bland behavior of the Cs could have been perceived as nonnormative for the males. This is apparently what occurred. Most Ss perceived the male Cs as being less dominant, less aggressive, less autonomous, and more deferent than the female Cs. Further, male Ss who interviewed male Cs accounted most clearly for these differences.

The most important conclusion to be drawn is that the typical use of interpersonal proximity as a dependent rather than an independent variable may reflect an important limitation of Hall's proxemic model. This experiment, unlike much previous research, explicitly and consistently used the model to determine procedures, manipulations, and measures and yet detected only a single indirect proximity effect. In this sense the results corroborate the observation by Albert and Dabbs (1, p. 270) that "the theoretical principles necessary to delineate variables that should be sensitive to variations in distance from those that should remain insensitive remains [sic] elusive." Hall's model may, in other words, be heuristically limited to the use of interpersonal distance as an index of interactants' feelings for one another (*cf.* 18). Hall himself stressed this feature of proxemic behavior: "*How people are feeling toward each other* at the time is a decisive factor in the distance used" (8, p. 114). As this study and the one previously discussed together demonstrate, interpersonal proximity as a determinant of feelings and behaviors may well be limited to situations in which other cues are relatively unavailable (e.g., the initial moments of an encounter) or in which it may mediate the informational value of other stimuli.

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ASSERTIVENESS, AGGRESSIVENESS, AND ATTITUDES TOWARD FEMINISM¹

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SUMMARY

The effect of observing an assertive and aggressive female model on attitudes toward feminism was investigated on a sample of 36 male and 36 female college students. The females but not the males who observed an aggressive model changed their attitude to a significantly less favorable position. This was interpreted as a negative sanction for aggressive behavior.

A. INTRODUCTION

The recent interest in the roles of women in contemporary society, especially focusing on feminism and the women's liberation movement, has suggested many areas of research which might profitably be investigated. One of these areas deals with assertiveness and aggressiveness in women. A major tenet of the women's liberation movement is that women should become more assertive and aggressive in demanding equality with men and freedom from the traditional feminine role (10).

The women's liberation movement has encountered several problems in its attempts to reach this goal. Studies have indicated that there is still a very definite and widely held feminine sex-role stereotype among both men and women (4, 7, 10). An investigation by Hawley (5) has shown that women may be influenced in their career choice by what they believe men think is appropriate female behavior. Also, social sanctions, such as lowered opinion of the woman, may operate on a woman who fails to fulfill the behavioral expectations of the female sex-role stereotype (4, 6, 10).

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There has been a recent interest in the difference between, and differential effects of assertiveness and aggressiveness. On the basis of the foregoing, therefore, an investigation was conducted to determine how the attitudes toward feminism of males and females might change as a result of exposure to an assertive female model and an aggressive female model. It was expected that observing an assertive model would not produce significant change in attitudes for either sex. Assertiveness as here defined is perceived as a socially accepted behavior for college students in the situation that would not produce negative sanctions through movement to a less positive position toward feminism. The individuals exposed to an aggressive model, however, were expected to respond to the aggressive behavior by applying negative sanctions through movement to a less positive attitude toward feminism.

B. METHOD

1. Subjects

Ss drawn from general psychology classes at the University of Albuquerque engaged in the experiment for required research credits. The mean age for males was 21.8 years and for females 22.6 years. Ss were debriefed at the end of the experimental conditions.

2. Attitude Scales

The short version of the Attitudes Toward Women Scale (AWS) developed by Spence *et al.* (9) was used as the attitude measure. Twelve of the 25 items were randomly assigned to be the pretest and 12 items were assigned to be the posttest measure. The extra item was discarded. Coefficient alpha was seen as sufficiently high to allow for this division by random assignment (8). An alternative form reliability coefficient for immediate successive presentation of two forms (2) yielded an r of .81 for a sample of 50 college students. The alternative form reliability coefficient for the control group was .79. A scale consisting of items concerning attitudes toward family size was devised by the authors: it was similar in length and format to the AWS pre- and postmeasures. This latter subject was deemed to be peripherally related to the subject of the experiment, but not so close as to influence posttest scores.

Two scripts were prepared for the model, one expressing strong assertiveness and one expressing aggressiveness. Using definitions developed by Alberti and Emmons (1) the authors determined the levels by comparing

and contrasting the scripts with each other. The scripts were equated for length. Two confederates were chosen to act as the *E* and as the model. Characteristics taken into consideration for the male *E* were an authoritarian appearance, the ability to remain constant throughout the experimental conditions, and acting ability. Those for the female model were ability to differentiate between aggressiveness and assertiveness, and acting ability.

3. Procedure

Equal numbers of males and females were randomly assigned to one of three conditions: Control Group, Assertive Condition, or Aggressive Condition. A personal information questionnaire and the pretest scale from the AWS were administered to each group to obtain a measure of existing attitudes toward feminism. At the completion of the scales (about 15 minutes) the AWS was collected and the family size scale was distributed. During the distribution of the family size scale the interaction between the *E* and the model was initiated. For the control group a period approximately equal to the time required for completion of the scripts in the other conditions was utilized in completing the distribution.

When the family size scale was completed and picked up, the posttest scale from the AWS was administered to all groups. *SS* were then debriefed and invited to ask questions.

a. Assertive Condition. During the distribution of the family size scale the model remained seated and questioned the *E* about the research. A normal conversational level and tone was used by the model.

Model (remains seated)—"I want to ask you some questions about this experiment."

E—"I can't promise you any answers, but go ahead."

Model—"I don't see any purpose in this experiment. Do you think you could tell me what use it is? I'd be interested in knowing. I've taken tests like this before, and this one just doesn't seem to be measuring anything important."

E—"I'm sorry, I'm not allowed to answer your questions about the experiment right now. But please continue and complete the scale."

Model—"I think I have a right to know what I've gotten involved in and what it will be used for, before I complete it. Is there some hidden purpose? If so, I think it's only fair to tell me."

E—"I can't give you that information right now, but if you will see me after we're done, I'll try to answer your questions. Please continue. OK?"

Model—"I still don't think it's right for me to have to finish without an explanation, but I'll see you later."

E—"Thank you."

b. Aggressive Condition. During the distribution of the family scale the model stood up and advanced a few steps toward the *E*. The model spoke in a loud and angry voice.

Model (stands up and advances a few steps toward the *E*)—"I'm going to ask you some questions, you better have the answers for me."

E (*E*'s dialogue was the same as that given for the Assertive Condition.)

Model—"This is a really stupid experiment. It's a waste of my time and besides you probably won't do anything worthwhile with it. I bet you aren't even qualified to do experiments, are you?"

E—

Model—"Damn it, I have a *right* to know what's going on here! I bet you have some ulterior motive in mind. What the hell are you planning to do with these questionnaires?"

E—

Model—"What the hell, OK! I'll finish, but if you can't give me some answers after we're done, you better be prepared for trouble!"

E—

C. RESULTS

Table 1 presents the means and standard deviations of pre- and posttest AWS scores for each group.

Since it was expected that males and females would differ on levels of AWS scores and the interest was in change and direction of change, the scores were transposed to ratios of posttest to pretest scores. The mean ratios for the females were 1.007 for controls, .9669 for assertive condition and .7799 for aggressive condition. The mean ratios for the males were 1.005 for controls, .9631 for assertive condition, and 1.049 for aggressive condition. A *F* max test for homogeneity of variances (3) carried out on the transformed scores showed that the variances were homogeneous ($F = 2.34$, $df = 6, 11$, $p > .05$).

TABLE 1
MEANS AND STANDARD DEVIATIONS OF SCORES ON THE ATTITUDE TOWARD WOMEN SCALE
BY GROUPS

	Control		Assertive		Aggressive	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
Females						
\bar{x}	27.83	27.67	25.17	24.00	27.67	21.58
<i>SD</i>	5.22	4.29	5.06	5.06	4.75	5.32
Males						
\bar{x}	24.25	24.00	23.10	22.00	24.33	23.23
<i>SD</i>	6.28	6.86	5.33	4.67	5.97	5.94

A 2×3 factorial analysis of variance (11) was performed on the data. There were no significant main effects, although the sex factor approached significance at the .10 level. A significant interaction was found indicating an experimental effect based on sex ($F = 4.43$, $df = 2, 66$, $p < .05$). Subsequent one-way analyses of variance showed a significant difference among the females ($F = 7.01$, $df = 2, 33$, $p < .01$) with no significant difference among the males ($F = 1.96$, $p = .05$). Scheffé's tests for differences between the means of the females' scores indicated a significant difference between the control group and the aggressive condition ($p < .05$) and between the assertive conditions and the aggressive condition ($p < .05$) but not between the control and assertive conditions. These data show that females subjected to the aggressive role model changed to a significantly less positive view of feminism, whereas there was no significant movement toward a more negative position by those experiencing the assertive model. The males showed no significant movement in the two experimental conditions.

D. DISCUSSION

The data support the hypothesis of the application of negative sanctions for aggressive behavior only for female Ss. This suggests a number of possible explanations. It appears that the males' attitudes toward feminism may be more firmly formed and less influenced by a single event. The ambiguity of many women toward aspects of feminism may be exhibited by the movement to a more negative position when observing a negative model. The lack of any significant differences in the assertive condition may have been due to the relatively weak nature of the assertive manipulation or due to an acceptance of situationally assertive behavior by college students.

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HOUSEWIFE PRODUCT COMMUNICATION ACTIVITY PATTERNS*

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SUMMARY

The study observed the communication behavior of Australian housewives, including both mass media and interpersonal communications, in order to test *a priori* hypotheses about four broad types of communication viz., *leaders*, *followers*, *exchangers*, and *isolates*, in respect of seven household products. A sample of 125 housewife members of an Australian commercial consumer panel each returned a *Time Diary* for one, 24 hour period, which reported exhaustively on their involvement in interpersonal and mass communications. When the data were factor analyzed, factors for all predicted communicator-types were observed. In particular, the findings show that opinion *exchange* between housewives was the dominant communication pattern for such household products, opinion leaders or followers were shown, contrary to more traditional theories of personal influence and communication, to be much less frequent than opinion exchangers.

A. INTRODUCTION

The research reported here is part of a larger project (described in 9) in which consumer panel purchasing information, social psychological and similar characteristics, and time-use and product communication activities have been observed for a sample of Australian housewives. The ultimate aims of those working on the project are to relate purchasing, communications behavior, and social-psychological processes to one another. The present paper reports the results of a study of communication behavior in which a data collection technique new to consumer behavior research—the Time Diary—has been used. The Diary, as designed, called for respondents to record, for each hour of the day (a) what they were doing, (b) where they were, (c) whom if anyone they were interacting with, (d) what

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communications, relevant to seven low-cost, frequently purchased household products, they received from any mass medium, or they gave or received interpersonally, together with a description of the other party.

The Time Diary has been used in the past primarily in the study of leisure (7, 15, 16). However, the importance of Time in marketing has been stressed by Schary (14) in his review article. March (10) has found consistent empirical evidence for the constraining influence of time upon communication behavior and purchasing, generally in line with the expectations of Howard and Sheth (3) and the conclusions of Mabry (8).

Given the constraint of time upon communications behavior, we may ask how housewives' communications activities are patterned in respect of giving and receiving, and of the behavioral settings of the communications' acts. In a different form, the question is partially answered in the literature of opinion leadership and personal influence (e.g., 1, 2, 4, 5) by classifying individuals according to their predominant mode of giving or receiving influence or information. In the present context, given the type of data we have, we will approach the question in what is perhaps a novel way.

It is possible to construct a set of *a priori* communicator types that is independent of past empirical findings. With the designation of mass media message received as MMM, and interpersonal messages as IPC, there are six possible communication states: Receive MMM, Do not receive MMM, Receive IPC, Do not receive IPC, Give IPC, and Do not give IPC.

If a matrix of these states was constructed (i.e., combining each communication state with every other one) we would find that it generated just four main *a priori* communicator types, together with some subtypes. These could be designated first as *Opinion leaders*—i.e., the "classic" (4) type who receives MMM, then transmits the information to others as IPC. There would also be a "modified" opinion leader who gives IPC but does not receive MMM. The second type can be designated as *Opinion Exchangers*, who both give and receive IPC. Third are *Opinion Followers* of which three subtypes can be identified: a "singular" opinion follower who receives IPC but does not receive MMM, a "Dual" type who receives both IPC and MMM, and a "mixed" type who receives IPC for some products but not for others. Finally, we can designate *Isolates*, again with three subtypes: "Partial," who receive MMM but neither give or receive IPC; "Total," who do not receive MMM and have no IPC activity; and "Mixed," who receive MMM for some products but not for others. Using the Time Diary data, we shall test to see to what extent this typology is

borne out empirically. In addition there are three important questions we can also address:

1. *To what extent is there generalized opinion leadership?* There is already a variety of evidence (1, 6, 11, 12, 13) that there is generalized opinion leadership, the more so when the products or activities involve similar interests. In many past researches, however, opinion leadership has been measured by self-designating instruments, which call for generalized judgments about *influence*. The present Time Diary, on the other hand, obtains only the number and content of communications received from any source.

2. *Do opinion leaders have greater exposure to the mass media?* Robertson (13) after reviewing the literature, suggests that we can tentatively conclude that they do, as per the two step flow theory of Katz and Lazarsfeld (4).

3. *To what extent is the opinion exchanger type, if it exists, frequent for household goods?* Myers and Robertson concluded their study of opinion leadership for household-related topics with the assertion that "the model of opinion leadership should be revised to include the concept of two-way influence" (12, p. 45), while Robertson (13) found support for the same view in examining other recent research.

The principal hypothesis is that representatives of each *a priori* communicator type should emerge from a factor analysis of the activity and time-use data. In addition, we hypothesized that the Total Isolate type would be the most subject to the constraint of time upon her communications activities: i.e., the more the housewife works or studies outside the home, the more infrequent will be her communications with neighbors, and her use of the mass media.

B. RESEARCH METHOD

A 24 hour Time Diary was administered, via the mails, to a sample of 125 housewives in the city of Adelaide, South Australia. These housewives were already participating members of a commercial consumer panel and were accustomed to keep detailed records such as that required. Each housewife completing the Diary was awarded a number of points which, when aggregated, permitted her to exchange the points for goods. This type of panel and incentive has been in operation in most advanced countries for the past 30 years.

Each housewife completed one diary for a single week-day, making a

total of 125 completed diaries. The researchers spread mailings equally over five week-days, in order to gain equality or representation for each day of the week.

The Diary contained the following sections: (a) time spent reading, listening to radio, watching TV; (b) time log for each half hour of the day from 7 a.m. to midnight; (c) for each of seven designated products, communications given and received, where, by whom (age and relationship); and, in the case of mass media, type and location.

The test products were instant coffee, biscuits, toilet soap, toothpaste, detergent washing powders, aerated soft drinks, jam.

After tabulation, the summary data were submitted to a principal components analysis, followed by Varimax Rotation of vectors with eigen values greater than 2. There were 15 measures of communication activity for each of seven products plus seven general time-use variables included.

C. MAIN FINDINGS

The main factors to emerge, and susceptible to ready and unambiguous interpretation are listed below, in order of explained variance (eigen values, as percentage of total variance, are given in parentheses). Only loadings of $\pm .30$ have been considered.

Factor 1: General Opinion Exchanger (11.4%). For five of the seven products, variables concerning the giving and receiving of IPC loaded on this, the first factor to emerge. Time spent driving a car also loads weakly here, suggesting that mobility may be one determinant of opinion exchange.

Factor 2: Dual Opinion Follower (5.3%). Variables concerning receiving MMM inside or outside the home, and receiving IPC, load on this factor. It tends to be generalized, loadings appearing for four of the seven products.

Factor 3: Modified Opinion Leader (4.5%). Giving IPC is the main feature of this factor, with three products related. For one product only, biscuits, receiving MMM outside the home is also related, giving it similarity to the "Classic" Opinion Leader type. Note that the behavior setting varies: within the home for instant coffee, outside the home for the other two products.

Factor 4: Mixed Opinion Exchanger (3.5%). Variables concerning opinion leadership for one product (biscuits) load here with variables suggesting opinion followership for another product (toothpaste). This type was not predicted.

Factor 5: Opinion Exchanger (soft drinks only) (3.3%). Giving and receiving IPC for soft drinks are the only substantial loadings on this factor, together with "Reading a magazine while travelling."

Factor 6: Opinion Exchanger (washing powders only) (3.2%). This factor relates out-of-home giving and receiving of IPC for detergent washing powders only. The positive loading of "Time helping neighbours" suggests that peer group influence, rather than family, may be particularly strong for this product.

Factor 7: Total Isolates (3.0%). Product communication variables make no contribution to this factor, which loads strongly and uniquely, in line with exception, on variables indicating that substantial time is spent away from the home, at work or study.

Factor 8: Modified Opinion Leader (2.7%). IPC "giving" variables load here for two products (differing from those in Factor 3 above). The giving is outside the home, and not to family, for both products.

Factor 9: Mixed Opinion Exchanger (2.6%). This is somewhat similar to Factor 4. IPC giving for one product is associated with receiving for another product (all negative loadings). Since both IPC given out of home and "Time with nonfamily" load on this factor, perhaps extensive peer socialization is particularly associated with these two products—biscuits and soft drinks.

Factor 10: Opinion Exchanger (jam only) (2.5%). Giving and receiving IPC to or from family load here for Jam only.

D. DISCUSSION

Consistent with the findings of other researches, but perhaps more clear-cut here, is the emergence of Opinion Exchanger types. The factor accounting for greatest variance is an Opinion Exchanger factor, and, interestingly, tends to be generalized—covering five of the seven products. Of the remaining nine factors, a further five are also Opinion Exchanger—three for single products, and two for a mixed pattern of giving IPC for one product and receiving for another. This result suggests that, at least for this type of product, a focussed search for generalized opinion *leaders* only may be misdirected.

Two modified Opinion Leader factors emerged, covering together five of the seven products, but only one product—within the configuration of a modified Opinion Leader factor—tended to approximate the "Classic" type. No opinion leader factor appears for washing powders or soft drinks, but it is to be noted that both these products appeared to be particularly related to

exhaustive peer socialization. It may be that the greater the frequency with which a product is discussed within the patterning of the housewife's everyday life, the less likely are opinion leaders to appear. A caveat on the rarity of the opinion leader type here, of course, is that we are defining all types only in terms of communicating frequency, not influence.

One "dual" factor only appeared for opinion following. Our *a priori* Mixed type was, however, approximated somewhat in the two Mixed Opinion Exchanger factors, which were not predicted. Although the emergence of an Opinion Follower factor or factors will no doubt depend upon sample size and type of products studied, it is plausible that a "singular" type is unlikely to appear in markets characterized by extensive television advertising.

The expectation that a product communication "isolate" type would appear is confirmed. The "Total Isolate" factor very clearly illustrates the constraining influence of work or study outside the home on *all* communication activities.

Turning back to the three questions posed earlier, we can conclude, on the basis of the present evidence, that

1. There was some generalized opinion leadership, as shown by Factors 3 and 8, and it was mainly exercised outside the home.
2. There was very little evidence that product-specific opinion leaders had greater exposure to the mass media than others. For only one of the five products that show an opinion leadership pattern—viz., biscuits in Factor 3, was the giving of IPC associated with receiving MMM.
3. While it is not implausible to conclude that some opinion leadership exists for these types of products, the much more significant finding is that generalized opinion exchanging best reflected the dynamics of interpersonal product communication. In other words, the central tendency of the market place for these products was towards exchanging and therefore diffusing information, rather than towards passively receiving information that may come from interpersonal or mass media sources.

Most generally, the "total accounting" approach taken here to housewife communication behavior seems to have been superior to some other techniques, especially the self-designating one, in not presupposing that one or another type of communication activity pattern is especially important; to concentrate on just one type is to lose a total perspective on the relative importance of different communicator types.

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REGIONAL DIFFERENCES IN PERSONALITY OF AFRO-AMERICAN CHILDREN*¹

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SUMMARY

This study was designed to determine whether regional differences could be found in an Afro-American population as they had been in previous studies of the general population. With the use of the Coan-Cattell Early School Questionnaire, 120 children from two different cities were compared by region, sex, and age. An analysis of variance revealed no differences within groups but found differences according to regions, along with some expected age differences. It was concluded that if geographical differences are considered along with those usually found for socioeconomic status, age, and sex, perhaps ethnicity is not nearly as important a variable as is currently maintained.

A. INTRODUCTION

The concept of regional differences in the United States in personality and behavior, although advocated by psychologists (1, 9), seems to have been best explored by cultural geographers. In their studies of the effect of geographical settings on behavior, they found six to 10 cultural regions that can be definitely specified on the basis of similar characteristics of the inhabitants (7). According to their findings, people of like interests, needs, orientations, and ideas appear to have settled in certain locations in this country. Such relative homogeneity encouraged the development of a specific subculture for that particular region. If we concede the relationship between culture and personality, we can also assume that a distinct regional personality was developed. The study by Krug and Kulhavy (10) in which they found that 30 percent of the variability in personality of a

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national sample was attributable to geographical regions seems to confirm this.

The focus of the present investigation is to determine whether or not similar findings can be attributed to an Afro-American population. Although Afro-Americans share a common geographical origin, they have tended to migrate to various sections of this country in order to seek improved social and economic opportunities. While social scientists have suggested that some changes in behavior and personality have occurred because of this movement (3, 4, 8), the general view is one of Afro-American similarity and homogeneity, regardless of regional location. Such an approach is highly stereotypic and denies the existence of group diversity. More important, it ignores the highly adaptable nature of Afro-Americans that has been the means of their survival through the years.

With the assumption that geographical settings, like other behavioral situations, do elicit common behavior, it is highly probable that Afro-Americans who move to a particular region would acquire the personality and behavioral traits similar to others in the area. We should, therefore, expect to find a difference in Afro-American personality according to geographical regions rather than the homogeneity as often purported.

B. METHOD

1. *Sample*

Because Afro-Americans are largely an urban population, it was deemed appropriate to select a sample representing urban centers. The cities of Los Angeles, California, and Atlanta, Georgia, were chosen because of their social, political, and climatic similarities. In examining the information on the populations of these two cities, it was noted that although the number of Afro-Americans in Los Angeles is double the number of Afro-Americans in Atlanta, the number of native-born individuals is essentially the same (12). The two cities did, however, differ in the geographical origins of their population. One-half of the Los Angeles population was born in other sections of the country, while at least 90% of the population in Atlanta was born in the South. Because it seemed more likely that children of a younger age would be born in the city in which they resided and would still be fairly reflective of the family reactions to the environment in which they lived, younger individuals were viewed as more appropriate for this study than adults.

The sample chosen for this study included 120 children equally distrib-

uted between the cities of Los Angeles and Atlanta. The groups were matched as closely as possible on age, sex, and grade. To alleviate other factors that might have an influence on personality, the children were selected from one level of the social hierarchy. To meet Warner's criteria (13) for middle-class social status, the sample was chosen from two schools located in the upper middle-class black neighborhood in both cities as determined by school-district records and a survey of the surrounding housing units. The listed occupations of the fathers of the group included professors, doctors, lawyers, teachers, and businessmen. In addition to an equal number of males and females, the children finally selected were six and eight years of age, all having had a birthday between May 1 and November 1 of the testing year and were in the first and third grades for the first time.

2. Instrument

The Coan-Cattell Early School Personality Questionnaire was chosen for the measuring instrument, since its primary focus is on determining the child's reaction to persons and stimuli in the environment. In addition, it is the companion test for children of the instrument used by Krug and Kulhavy (10). It consists of 13 reasonably independent factors that represent a cluster of traits arranged on a continuum. Scores obtained on each factor are converted to a stanine scale with scores of 1 to 4 considered in the low range, scores of 5 and 6 considered as average, and scores of 7 to 10 considered as high.

C. RESULTS

An analysis of the data by means of a factorial design indicated that while there was no significant variation of the individuals within cities, there were differences in the children based on the geographical region in which they lived. *Post hoc* comparisons by the Scheffé method found these differences in the means of Factors A, D, E, F, G, H, and I at the .01 significance level.

The differences in the means on Factor A suggest that the Atlanta children were more people-oriented than the Los Angeles children ($F = 68.25$). The Atlanta children appeared more sociable, outgoing, and warm, while those from Los Angeles were reserved, critical, and aloof. On Factor D it was noted that children in the West were more excitable than those in the South ($F = 6.95$).

The scores on Factor E are generally used to indicate whether children of

this age range tend to be dependent, obedient, and conforming, as opposed to being independent, dominant, and aggressive. Girls in these two samples were significantly more independent and assertive than boys if they lived in Los Angeles, whereas boys were higher in these traits than girls if they were from Atlanta ($F = 4.57$).

Scores in the lower range of Factor F suggest that the individual is serious, prudent, and sober, whereas higher range scores indicate that the student is gay, enthusiastic, optimistic, and self-confident. Significance tests at the .01 level on this factor revealed that girls tended to have higher scores than boys and that Southern children were apparently more self-confident, optimistic, and enthusiastic than children living in the West ($F = 11.17$).

Factor G is designed to measure the level of incorporation of adult values by children of this age range. The difference on this factor was essentially an age rather than a regional difference with children in grade one showing more independence, dominance, and assertiveness than the children in grade three who indicated a tendency toward dependency, obedience, and conformity ($F = 7.17$). The accompanying Factor H is designed to measure a child's approach-avoidance response to people. Comparison of the means on this factor found regional rather than age differences. Children in the South were apparently more extroverted than children in the West who leaned toward introversion ($F = 15.65$).

The mean scores on Factor I from which the amount of protection and sympathy needed from others is determined found an interactive effect for both sex and city, and grade and city. On this factor girls seemed to be more self-reliant and less in need of protection than boys in Los Angeles, whereas boys were seemingly more self-reliant, tough-minded and less in need of protection than girls in Atlanta ($F = 8.15$).

Throughout the comparisons, numerous results were noted that seemed consistent with the developmental levels expected from this age group. Third graders were found to be more self-reliant than first graders (Factor I, $F = 5.85$, $p = .05$); the younger children were seen as more responsive to adult wishes than the older children (Factor H, $F = 6.19$, $p = .05$); and first graders were seemingly more excitable and overactive than third graders (Factor D, $F = 4.94$, $p = .01$).

D. DISCUSSION

Although considered middle class by general society criteria, the families from which these children came are generally considered to be members of

the upper class within the Afro-American community. Within this type of community, children are generally subjected to the type of socialization that tends to isolate them from the white community. As described by Frazier (5, 6) these families assiduously attempt to inculcate the concept of superiority of their position and spend a great deal of time teaching their children to remain aloof from the white community. Most important, of course, is that the children are protected and insulated in every way possible from possible conflicts or overt acts of discrimination that might destroy their self-concept and sense of belonging. The result is that this group insures that their children are involved in social activities and groups that are dominated by peers of their socioeconomic status (2). Random conversations with teachers, parents, and others in the neighborhood seemed to indicate similar patterns of behavior to be present for these children. Except for the media, which are said to be monitored fairly closely, this group of children seems largely isolated within the confines of the Afro-American community.

In spite of this possible isolation, the traits identified seemingly parallel those of the larger environment and differ from region to region accordingly. For example, in Gastil's study (7) of the people of the South, he described them as being people-oriented, self-sufficient, and oriented toward sex roles in which the woman is worshipped and the man rules. They are also seen as conforming and ostentatious. The results of the present personality study would suggest that this description is similar to the traits found in the Southern sample. Children from Atlanta appeared to be outgoing, sociable, calm, and self-confident, and the differences in personality between sexes suggest a tendency toward behavior that is consistent with regionally accepted sex roles.

The individuals in the coastal region of the Pacific Southwest were described by Gastil (7) as typical Middle-Westerners who migrated to the "land of opportunity." As such they found it necessary to be individualistic, competent, present-oriented, leary of outsiders, materialistic, and self-assured. Results of the profile of the Los Angeles children found them wary, introverted, individualistic, and rather reserved and aloof—characteristics that closely parallel the regional descriptions. From these results it appears as though these parents, having determined the behavior necessary for survival and competence in their chosen environments, proceeded to socialize their children in ways that produced personalities similar to others in their respective regions.

As reported in a previous study (11), although very similar to children of

their age range in personality traits, this group of children did demonstrate some traits that appeared to be the result of being an Afro-American in a caste-oriented society. They tended toward being more aloof and shrewd and much more aware of stimuli in their environment. In spite of these findings, it does appear that ethnicity should not be regarded as the all-inclusive variable that can explain human behavior. If sex, social class, age, and now geographical setting are included as influential factors impinging on individuals, the color of one's skin seems to be significantly less important as a behavioral determinant.

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FUNCTIONAL ANALYSIS OF PERSUASIVE INTERACTION IN A ROLE-PLAYING EXPERIMENT*¹

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SUMMARY

One hundred eighty-six male undergraduates were separately confronted by someone (an actor) asking them to sign a petition in a laboratory experiment of multifactorial design. The actor's behavior and the S's response were rated with the use of two four-dimensional schemes, one based on Leary-Bales-Couch interaction process and the other Parsons-Effrat functional ("AGIL") analysis. Positive behavior by the actor and, to some extent, "serious" behavior were reciprocated by S. The rating schemes were significantly interrelated with dominance associated with functional Goal-attainment force (G), positiveness with emphasis on interpersonal Integration (I), seriousness with reliance on Adaptive information (A), and (to some extent) conforming behavior with concern for basic values (Latent pattern maintenance (L)). When the petition's content was consistent with the S's value orientation, increased dominance by the actor augmented S's readiness to sign. Otherwise, dominance had the opposite effect.

The relative effects of various pressures are consistent with a "cybernetic hierarchy" in the expected order L-I-G-A, the "L" area having the most influence.

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² Reprints are available from the second author at the address shown at the end of this article.

A. INTRODUCTION

The present study examines a combination of theoretical and empirical questions regarding pressures to conform. First, when a person is approached with a request from another person, to what extent are the style and content of the response determined by the style and content of the request? Second, if the request is one that seeks conformity on the part of the responder, can the actual responses be explained by the theoretical concept of a "cybernetic hierarchy of control?" A viable strategy for arriving at answers for the questions we have posed is to use a tightly controlled experimental situation.

1. *Application of Functional Theory*

The various pressures which can be placed on a person in a group in an effort to induce conformity can be classified according to the four functional areas: latent pattern maintenance and tension management (L), integration (I), goal-attainment (G), and adaptation (A). A person may be urged to conform on the basis of commitment to values (L), the influence of significant references groups (I), the power of the leader or the majority (G), or the reward of money, information, or some other resource (A). Following the summary of functional theory provided by Effrat (6), we would expect the effectiveness of these four types of variables would follow the cybernetic hierarchy in the order L-I-G-A with values being the most influential and money and information the least.

This ordering was also suggested by Jahoda (9) and Kelman (10) without explicit reference to functional theory. Kelman's work suggests some of the ways in which the cybernetic hierarchy of control actually works. For instance, factors high on information control those high on energy. It is not that information is more controlling than energy in some abstract way, but that the information in the form of values is carried within the individual while the factors which depend on energy are external. Beginning at the top, the values (L) are the most powerful, since once internalized, one carries them wherever one goes. Next come the norms representing reciprocal role relationships (I). Once adopted through identification, they can be called up whenever the other person is present or whenever the relationship is "salient" for some other reason. Next in order comes the response to the power of a task supervisor (G), since it will only be effective while the supervisor is present. Last would be the power of money or another energy source as a means of influence in the adaptive (A) area. Although Kelman

does not include this type of influence in his analysis, it should have the least power because money only insures a response at the moment it is exchanged. Once the deal is closed, the vote is purchased, or whatever form of response is sought, the money has no continuing influence. For the next round, more money must be produced if the influence is to be maintained. In a similar way, other sources of high energy tend to be consumed in use.

Unfortunately, few experiments consider more than one variable at a time so that it is difficult to find evidence to support the hypothesis that the four types of influence on conformity are ordered according to the L, I, G, A hierarchy. Kelman's (10) experiment demonstrates that variables of the L, I, and G types have an influence on attitude change (*cf.* 18). Experiments by Kiesler *et al.* (11, 12, 13, 14) give evidence that commitment to continue in a group (L) is a more powerful influence on conformity than attraction to the group (I). Asch's experiments (1) on judging lengths of lines provide one of the best illustrations of the cybernetic hierarchy. A variable related to pattern maintenance (defining the task as one of individual judgment) is more powerful than an integrative variable (having a partner). The integrative variable is in turn more powerful than a goal-attainment variable (majority pressure). Finally, the adaptive variable (modifying the length of the line) is the least powerful. The results of the Milgram experiments (19) are similar. Although the effect of the shocks which *S*s give to stimulate a "learner" to learn is unambiguous (A), the authority of the *E* is much more powerful as an influence (G). This could in turn be modified if one other *S* appears to defy the *E* (I). Finally, the value *S* places on not harming another human is the most effective deterrent (L).

2. *Measurement of Social Interaction: Categorizing Pressures to Conform*

The present experiment seeks to rate behavior on two different dimensional schemes for measuring social interaction: the first seeks to reveal aspects of the *form* of pressures to conform and the second seeks to reveal the *content* of pressures to conform. For the *form* of interaction we use a four-dimensional system developed from the work of Bales (2) and Couch (5), and described by Hare (7, 8). The four dimensions—dominant-submissive, positive-negative, serious-expressive, and conforming-nonconforming—are operationalized as seven-point scales, one end representing functional behavior and the other representing dysfunctional behavior.

They may be used in rating the behavior of someone who is urging conformity or to score the behavior of a person who is responding to pressures to conform.

Leary (17) found that dominant behavior on the part of one person will "pull" submissive behavior from another, and that submissive behavior will pull dominant. He also found that positive behavior tends to pull positive behavior, and negative tends to pull negative. In an extension of Leary's two dimensional scheme, Hare (7) hypothesizes that serious behavior will pull serious, and conforming behavior on the part of one person will lead to conformity by another. We will briefly examine these expectations in our analysis below.

The content of interaction is also scored according to a set of four dimensions which correspond directly to the four functional dimensions discussed above. The rating dimensions are derived from work by Effrat (6), who described functional and dysfunctional categories of behavior in each of the four functional problem areas. These categories were modified in turn to be used in rating the behavior characteristic of a person who is either urging conformity or responding to pressures to conform.³ As we have already indicated, an attempt to urge conformity by offering money or by giving facts can be seen as a pressure in the *adaptive* area. An attempt to coerce opinion change through leadership or majority opinion is a pressure in the *goal-attainment* area. A pressure which urges conformity for the sake of friendship or because some positive or negative reference group holds a given attitude uses the *integrative* area. When one urges conformity on the basis of common values and stresses commitment to issues, the *latent pattern-maintenance* area is used.

These two sets of dimensions are not entirely independent of one another. Following Parsons, Bales, and Shils (21) and Hare (7), we hypothesize that each of the four dimensions describing the form of interpersonal behavior will be associated with one of the dimensions describing the content of interpersonal behavior. Respectively, we expect that dominant behavior will be most highly (positively) associated with Goal-attainment, positive behavior with Integration, serious with Adaptation, and conforming with Latent pattern-maintenance. Thus the categories based on the four dimensions of interpersonal behavior and the categories based on the

³ More detailed information on the scoring schemes is available from the senior author at the University of Cape Town, Department of Sociology, Cape Town, South Africa.

four functional problems are hypothesized as being to some extent interchangeable as a method of recording various types of pressures to conform.

B. METHOD

Students enrolled in Temple University summer school ($N = 186$) were recruited as *Ss*. For the interaction part of the experiment, *S* was ushered into a classroom through a door at the back. At the front of the classroom was a stage-set representing a grocer's shopfront. Seated at or standing near a small table outside of the grocer's was a man of student age (who was in reality a graduate student of drama). Also in the classroom was a videotape camera with operator and several graduate students who were observing and making ratings of the actors and *Ss* to provide additional tests of reliability for the ratings made by Hare and Blumberg which were used in the analysis below. *S* was told to assume that he was on his way to the grocer's, and that he would be asked something as he approached the shop. By using a role-playing experiment rather than observation under field conditions we expect, along with Willis and Willis (23), that we may discover some of the larger, more obvious effects, but that some of the subtle effects may go undetected.

The first actor was used with all versions of the experimental variables (as described below—each combination occurred only once, in random sequence), and a second actor was used with a replication of a quarter of the total experiment (*S* as self, questionnaire before experiment). Both actors and all *Ss* were male. The number of *Ss* is greater than the number of experimental cells, because those conditions which, by random assignment, employed black *Ss* were replicated with white *Ss* in order to avoid confounding the experiment with an additional variable, race.

The actor engaged the *S* in a short conversation during which he tried to persuade *S* to sign a petition. The conversations lasted about a minute or a minute and a half, an amount of time comparable to that taken by petitioners in natural settings. The action was terminated when *S* signed or clearly indicated an intention not to sign. In each encounter the actor played a role which represented some combination of dominant or submissive, positive or negative, and serious or expressive behavior. For instance, as one of eight possibilities, the actor might have been asked to behave in a submissive-positive-serious manner. As a fourth variable, in the value area (*L*), the actor dressed in a "straight" fashion when he presented a petition opposed to an increase in social security benefits

("antiwelfare") and in a "hippy" fashion when he presented a "prowelfare" petition.

As three further experimental variables, the petitions either had no signatures or else about 10 signatures already on them [a variable in the G area (*cf.* 3, 22)]. *S* was asked either to be himself or to play a suburbanite [another variable in the value area (L)]. Finally, the encounters took place either before or after a battery of psychological tests and other questionnaires were given to *S*, since the sequence could affect both the test scores and the behavior during the experiment (16).

Various measures and questionnaires about demographic background and personality were administered to *Ss*, partly within a separate program of test development and partly as a test of the expectation that these individual differences would not interact with experimental variables.

All interaction was scored live by several observers with the use of the four-dimensional interaction-process category system. Later the interaction was scored again, from videotape, with the use of the same system in order to measure reliability and with the use of the scheme for functional (AGIL) analysis. Each *S* also filled out a postsession questionnaire.

It was only immediately before each encounter that the actor learned which "part" he was to play. He turned over a card which indicated some combination of the dominant, positive, and serious dimensions in random order. The observers did not know which condition was being run. The variations in types of petition and dress were "run in blocks."

C. RESULTS AND DISCUSSION

Reliabilities for the two category systems for one pair of observers are given in Table 1. The coefficients are calculated from "single-judgment" data which would be expected to be less reliable than scores based on a number of averaged ratings. In general the reliabilities are higher for the actor, who spoke for a longer period of time, than for the *S*, who sometimes barely spoke at all. Reliabilities are also higher for the four-dimensional process system, on which the observers had had considerable practice, than for the AGIL scheme, which was being applied for the first time. The self-self reliabilities for one observer who used the four-dimensional categories both live and from videotape are higher than between-observer reliabilities.

1. *Actor's Effect on S's Response*

There were no significant correlations between actor and *S* on the dimensions of dominance-submission or on conforming-nonconforming.

TABLE 1
RELIABILITIES OF CATEGORIES

Dimension or area	Actor	Subject
<i>Intercoder reliabilities for form of interaction^a</i>		
Dominance-submission	.61	.53
Positive-negative	.67	.36
Serious-expressive	.70	.45
Conforming-nonconforming	.41	.76
<i>Intercoder reliabilities for content of interaction^b</i>		
Adaptation	.65	.57
Goal-attainment	.64	-.38
Integration	.34	.25
Latent pattern-maintenance	.56	.20
<i>Intracoder reliabilities for form of interaction^c</i>		
Dominance-submission	.45	.76
Positive-negative	.69	.62
Serious-expressive	.84	.52
Conforming-nonconforming	.62	.70

^a Correlations between scores for Hare and Blumberg for four dimensions of social interaction ($N = 184$).

^b Correlations between scores for Hare and Blumberg for AGILL categories of pressures to conform.

^c Correlations between scores for Blumberg coding live and from videotape for four dimensions of social interaction.

Positive behavior by the actor was significantly correlated (.32) with positive behavior by *S*. Also, there was a small but statistically significant correlation between serious behavior by the actor and serious behavior by *S*. These associations may be partly due to the raters' response sets (*cf.* 4).

Correlations between the four dimensions of observed behavior for the actors provided a test of how well the actors were playing their roles. Since the actors were given the various combinations (as independent factors of dominant or submissive, positive or negative, and serious or expressive) in random order to enact as roles, there should have been no large correlations between these behaviors in the actual encounters. These correlations were close to zero and not significant. However, the actor's conforming-nonconforming behavior was left free to vary (rated "conformity" refers to the style of interaction, which would not necessarily correspond to the "conformity" manifest in the actor's style of dress and content of petition). As it turned out, when the actor was dominant and serious, he was also seen as conforming and urging conformity of the *S*, correlations of .24 and .41, respectively.

There was also a significant difference between the actors. One of them was much more positive when he was asked to be dominant. He would place his arm around *S* and in other ways show more overt friendliness.

2. *Comparison of the Two Systems of Categories*

Table 2 gives the correlations between the four-dimensional process categories and the AGIL system for the actors. We had expected that dominant behavior would be most highly (positively) associated with Goal-attainment, positive behavior with Integration, serious with Adaptation, and conforming with Latent pattern maintenance and tension management. In the first three cases, the highest positive correlation between pairs of categories is located in the expected cell. For the fourth area, although conforming behavior is significantly correlated with pattern maintenance, the correlation is barely higher than it is between conformity and the other AGIL categories. Perhaps this is because conforming-nonconforming and pattern maintenance were the most difficult to score. Further there is a high negative correlation between the positive behavior of the actor and his persuasive attempts in the goal-attainment area. This simply means that when the actor was being coercive he was seen as quite negative.

3. *Other Effects*

Whether the battery of psychological tests was given before or after the roleplay made a significant difference (at the .05 level or better) in a number of instances. Comparing *Ss* who were given the tests before the roleplay encounter ($N = 76$) with those who were given the tests afterwards ($N = 74$), all with the same actor, we found that those taking the tests beforehand were lower in yea-saying, higher in verbal *IQ*, and more dominant and serious in the encounter. They took considerably less time in the encounter (73 seconds *vs.* 115 seconds). Also the actor was not as strong in his demands for conformity. This suggests that *Ss* who had already sat through up to an hour's testing were eager to finish the roleplay. They

TABLE 2
RELATIONSHIPS (r) BETWEEN CATEGORIES IN FOUR DIMENSIONS AND AGIL SYSTEMS^a

Dimension	Adaptation	Goal attainment	Integration	Latent pattern maintenance
Dominant	.25	.35		
Positive	-.04	-.66	.06	.23
Serious	.50	.13	.38	-.03
Conforming	.14	.15	-.19	.28
			-.15	.16

Note: For $N = 150$, a correlation of .16 is significant at the .05 level and .21 at the .01 level.

^a Hare's ratings ($N = 185$).

"came on" in a dominant, serious manner and finished in considerably less time. The actor, in turn, was less inclined to press them to conform. Since *Ss* had plenty of time for the psychological tests, they were less likely to give uncritical answers (yea-saying) and more likely to seek out the right answer on the *IQ* test. The number of signatures on the petition had no overall effect.

4. *Effective Persuasion*

The major findings of the experiment with regard to conditions found to affect the conforming behavior of *S* are illustrated in Table 3. The table gives the mean ratings for *S*'s conformity (mainly, rating of the *S*'s readiness to sign the petition) for various combinations of *S*'s role (playing self or a suburbanite), the issue described in the petition (prowelfare or antiwelfare), and whether or not the actor was instructed to play a dominant or submissive role. The major effect is produced by the combination of *S*'s role and the issue on the petition. When *S* was playing himself and the petition was prowelfare, conformity was quite likely, an indication that most *Ss* were in fact "prowelfare." However, when *S* was playing the suburbanite and when the petition was antiwelfare, conformity was most likely an indication that most *Ss* believe that suburbanites are antiwelfare.

Further, the highest conformity within each *S* role occurred when the actor was dominant and the petition was consistent with *S*'s role. It appears that when the petition was consistent with *S*'s role, increased dominance on the part of the actor was likely to lead to increased conformity on the part of *S*. However, if the petition was not in line with the values implied in the role, then an actor who "comes on strong" was likely to "turn off" *S* and make conformity less likely. The conclusion would seem

TABLE 3
MEAN RATINGS OF *S* CONFORMITY BY *S* ROLE, PETITION ISSUE, AND DOMINANCE OF ACTOR'S ROLE

<i>S</i> role	Dominant		Submissive	
	Mean	<i>N</i>	Mean	<i>N</i>
Self				
Prowelfare	4.52	27	4.50	26
Antiwelfare	2.50	28	2.92	24
Suburbanite				
Prowelfare	2.38	21	3.27	22
Antiwelfare	4.35	20	3.82	17

Note: *N* = 185. *F* test significant at .04 level.

to be to use a "soft sell" on those whose values are dissimilar to yours and reserve the "hard sell" for your friends. A similar effect is reported by Nesbitt (20) who tried to persuade community residents in the United States to take a position against the Vietnam war. A written pamphlet had no effect while an oral communication by a student had a negative effect. Presumably this also indicates that the community resident was "turned off" by pressure from a student with a different value position.

The results confirm the hypothesis that a factor which is related to values (pro- or antiwelfare) is more important in determining conformity than a factor which is related to goal attainment (interpersonal dominance).

In demonstrating that the content of a petition is generally more crucial than manner of presentation, our findings are similar to those of Konečni and Ebbesen (15). They expected that—if a petitioner were a child or were accompanied by a child rather than being a lone adult—suburban women would be more likely to sign a petition "appropriate for children" and less likely to sign one that was "inappropriate for children." However, in an actual field test, only the overall difference between petitions had a significant effect.

In our experiment the correlation between the conformity of *S* and the positive behavior of the actor over all conditions was .20 (significant at the .01 level) compared with a correlation of .08 between *S*'s conformity and the actor's dominance, and .07 between *S*'s conformity and the actor's seriousness. This suggests that a variable related to integration is more important than one related to goal-attainment or adaptation.

To provide additional insight, several other analyses were performed, all with similar results. One applied ANOVA to Hare's ratings of *S*s' conformity as the dependent variable and five experimental dimensions as the independent variables. In the $2 \times 2 \times 2 \times 2 \times 2$ design, *L* was represented by either the content of the petition or the actor's dress, *G* by either the actor's programmed dominance or whether the petition presented to the *S* already had signatures on it, *I* by the actor's programmed positiveness, and *A* by the actor's programmed seriousness.

Separate analyses of variance were carried out for *S* playing himself and for *S* playing a suburbanite. For both analyses a large and significant main effect appeared for the *L* variable (in the directions noted above). Specifically, for *S* as self, the pro-welfare petition was more likely to be signed ($p < .001$), as manifest in Hare's rating of conformity; and for *S* as suburbanite, antiwelfare signatures were more likely ($p < .001$). The only other significant main effects were due to *I* and *G* variables: the actor's positive-

ness, in the case of *S* as suburbanite ($p < .05$), and the presence of signatures on the petition in the case of *S* as self ($p < .05$), both increased the likelihood of conformity (i.e., signing the petition). For each analysis there was one significant interaction effect. The significant interaction brought additional "G" variables into the picture. In the case of *S* as self, it was the interaction among *I* and the two "G" variables ($p < .01$). *Ss* were especially likely to sign when the presentation was dominant-signatures (already present) -positive, and especially unlikely to sign in the condition of submissive-no signatures-negative. In the case of *S* as suburbanite, there was a significant $L \times G$ interaction: as discussed above, dominance led to increased signing of the antiwelfare petition and less signing of the pro-welfare petition.

We can infer from the combination of the results of the correlations and the analyses of variance that the relative effect of the various pressures to conform is consistent with the expected order $L-I-G-A$, although the evidence is most conclusive for *L* in relation to the other variables.

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IMPRESSION MANAGEMENT EFFECTS IN THE FORCED COMPLIANCE SITUATION*

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SUMMARY

Two forced compliance studies were conducted in which the *S*'s expectations regarding the situational appropriateness of his behavior were manipulated. In the first study ($N = 36$ female undergraduates) *E* indicated agreement or disagreement with the *S*'s counterattitudinal essay or else did not give an opinion. Although attitude change occurred in the Agree and No Feedback groups, there was none in the Disagree condition. Three conditions were created in the second study ($N = 142$ male and female undergraduates): Standard Dissonance, Control, and a Model condition in which a confederate told the *E* his essay did not reflect his real attitude. Attitude change occurred in both experimental groups, but more occurred in the Dissonance than the Model condition. These results are interpreted in terms of impression management theory.

A. INTRODUCTION

In its original formulation, dissonance reduction was postulated as a mode of resolving behavior-attitude inconsistency. One mode of resolution has been demonstrated in the forced compliance paradigm in which an *S* must rectify his counterattitudinal behavior with his actual belief. This results in changing of beliefs. The effect has been shown to depend on necessary conditions, such as choice or responsibility (2, 8), negative consequences (7), and public commitment (1, 6). More recent restrictions on the dissonance effect concern the foreseeability of consequences (5) and the persuasibility and/or commitment of the audience (9). Thus dissonance has

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¹ Requests for reprints should be directed to the third author, James T. Tedeschi, at the address shown at the end of this article.

undergone a metamorphosis which has increasingly focused upon the implications of the counterattitudinal act rather than the inconsistency between the attitude and the act.

Tedeschi, Schlenker, and Bonoma (11) proposed an impression management interpretation of attitude change in the forced compliance situation. This theory focused on the inconsistency dilemma that is created by the *S*'s willingness to help the *E*. Inconsistency conveys the notion of emotional or mental instability and undermines the person's credibility and hence his effectiveness in influencing others. Since the only evidence the *E* has of the individual's attitudes (so far as the latter knows) is the counterattitudinal behavior, subsequent requests for the individual's real attitude lead him to indicate one that is not too discrepant from the behavior that was just performed.

In addition to maintaining an impression of consistency, attitude change in the forced compliance situation serves as a denial or justification of the counterattitudinal behavior. For example, if the *S* has just written an antitoothbrushing essay that is allegedly being given to junior high school students and will influence some of them with the consequence of some deterioration in dental hygiene habits (7), he may assert his "true" attitude in the direction of believing that toothbrushing is harmful to one's health. This serves the impression management concern for consistency and justifies the counterattitudinal behavior as not harmful. Impression management theory views the individual as presenting himself in the best possible light given the constraints imposed on him both by the experimental situation and the response alternatives allowed him by the *E*.

According to Tedeschi *et al.*, the individual in the forced compliance situation is trapped by his willingness to help in carrying out the scientist's project. While he has aided the *E*, he has done so by freely and publicly engaging in a counterattitudinal behavior which has negative consequences. Thus some question might arise in the psychologist-*E*'s mind about the moral character of the *S*. In this context the *S* is especially sensitive to any cue available to him about how best to present himself. Two independent studies were designed to demonstrate the effects of different expectations and situational cues on the attitude-consistency of *S*s.

B. EXPERIMENT I

The first study set out to demonstrate that implicit expectations operate in the forced compliance paradigm. In this situation an *E* forces an *S* to write a counterattitudinal essay which is clearly antinormative. The *S*s are

given no explicit feedback as to the *E*'s own position on the counterattitudinal issue. However, it is reasonable to assume that *S*s infer that the *E* perceives some merit in the counterattitudinal position. He asks them to take the position, often provides some arguments for the *S*s to use, and generally acts as if it is just as valid as the opposite (proattitudinal) position. If this implicit legitimation of the counterattitudinal position is explicitly denied by the *E*, it might be expected that *S*s would maintain their original opinions, choosing to agree with the *E* rather than to feign consistency by maintaining the counterattitudinal position. This analysis suggests that the attitude-behavior consistency demonstrated by *S*s in the forced compliance paradigm is a self-presentation strategy fostered by the subtle cues provided by the *E*. Thus, if expectations are made explicit the *S*'s expressed attitude might be expected to correspond with the *E*'s explicit feedback. On the other hand, if the attitude-behavior consistency demonstrated by *S*s is the result of a need to maintain consistency, the *E*'s expressed opinion should have no effect and the *S*s should manifest attitude change in the direction of the counterattitudinal behavior. The basic design was an after-only design typically used in dissonance studies. Agree, Disagree, or No Feedback was given by the *E* following the *S*'s counterattitudinal advocacy.

1. Method

a. Subjects. Thirty-six female introductory psychology students satisfied a course requirement by participation and were randomly assigned to the three conditions ($n = 12$).

b. Procedure. The male *E* introduced himself as an instructor in social psychology and represented the study as his dissertation.² He told each *S* that past research indicated that college students were effective influence agents with junior high school students and that he was interested in finding out whether arguments made in favor of or against cigarette smoking would affect the relevant behavior of the younger age group. It was explained that all of the necessary essays taking the antismoking position had been obtained, that essays favoring smoking were needed, but that the *S* was of course free to choose either position.

When the essay was finished the *E* looked it over and commented that the arguments were quite convincing and obviously well thought out. Then

² The authors take this opportunity to acknowledge gratefully the help of William Van Sickle, Robert Miller, and Robert Schlegel for performing competently as *E*s in this study.

the agree or disagree manipulation occurred: Agree Feedback: The *E* agreed with the prosmoking position and provided as a rationale for his view a short critique of research that draws conclusions about cause and effect from correlational data. Disagree Feedback: An antismoking position was expressed and evidence regarding the pathological consequences of smoking was cited.

All *Ss* were then told that the experiment was over but that they could complete a full hour of credit by volunteering to complete a medical health questionnaire for the state government. Embedded in this questionnaire were two critical items to which *Ss* responded on an agree-disagree seven-point Likert Scale: "No one should begin smoking" (item 20); and "Although some evidence suggests smoking is detrimental to one's health, the evidence is not conclusive and people should not be prevented from starting the habit" (item 23).

2. Results

One way three group ANOVAs were performed on the dependent variables. Significant effects were obtained on item 20 [$F(2,32) = 3.43, p < .045$], item 23 [$F(2,32) = 3.20, p < .054$], and on the sum of items 20 and 23 [$F(2,32) = 3.56, p < .04$]. The means for these dependent measures for each of the groups are shown in Table 1. Orthogonally decomposed comparisons contrasting the Agree Feedback mean against the No Feedback mean, and both of these against the Disagree Feedback mean were computed on these three variables. In addition nonorthogonal comparisons were performed contrasting the Agree and Disagree groups on all three measures. The results showed that the Agree group did not differ significantly from the No Feedback group on any of the measures (all p 's $> .10$). When the Agree Feedback and No Feedback groups were combined and contrasted against the Disagree Feedback group, significant differences were found on item 20 [$F(1,32) = 8.39, p < .01$], item 23 [$F(1,32) = 5.96, p < .05$], and the sum of the two items [$F(1,32) = 8.71, p < .01$].

Nonorthogonal comparisons between the Agree Feedback and Disagree Feedback conditions revealed significant effects for item 23 [$F(1,32) = 6.44, p < .05$] and for the sum of items 20 and 23 [$F(1,32) = 6.39, p < .05$]. In both conditions the attitudes expressed by *Ss* were in the direction of the position indicated by the *E*. In the case of the Agree Feedback condition this meant displaying an attitude that was consistent with the counterattitudinal position, but in the Disagree Feedback condition *Ss*

attitudes were inconsistent with the counterattitudinal position (see Table 1).

3. Discussion

The data clearly supported impression management theory predictions. Ss displayed more attitude change in the direction of the counterattitudinal behavior in the Agree Feedback and No Feedback conditions than in the Disagree Feedback condition. Thus, agreement by the *E* provides a cue to the *S* that he can safely espouse an attitude consistent with the counterattitudinal position without risking negative evaluation. This risk was too high in the Negative Feedback condition and hence inhibited the Ss from expressing attitudes consistent with the counterattitudinal position. Presumably it was better to appear inconsistent than it was to genuinely hold the "wrong" attitude. The failure to find any differences between the Agree Feedback and No Feedback conditions suggests that Ss generally either believe the *E* holds the counterattitudinal position or there is sufficient ambiguity that they take the risk of revealing their "true" attitude as consistent with their counterattitudinal behavior.

Dissonance theorists might well argue that *E* feedback is irrelevant to dissonance because it occurs postdecisionally. Furthermore, it might be said that the demand cues associated with feedback provided by the *E* overrode the dissonance effect expected in the Disagree Feedback condition. However, if this objection were valid it would be expected that overdetermination would occur in the Agree Feedback condition: both dissonance and demand cues pull the Ss in the same direction. The lack of a difference between the Agree Feedback and No Feedback conditions is not consistent with this line of argumentation.

TABLE 1
MEANS FOR THE EXPERIMENTAL GROUPS ON THE RELEVANT DEPENDENT VARIABLES

Question	Type of feedback		
	Agree	Disagree	No feedback
No one should begin smoking. (item #20)	5.25	6.75	4.82
Evidence re health not conclusive and people should not be prevented from beginning habit. (item #23)	4.00	6.25	5.18
Sum of items 20 and 23.	9.25	13.00	10.00

Note: Higher means indicate a more proattitudinal position.

C. EXPERIMENT II

The second study was undertaken to investigate the influence of a model on lessening the *S*'s concern about impression management in the forced compliance situation.³ It was a one-way, three-group design with Dissonance, Model, and Control conditions. It was predicted that a model who openly expressed his lack of concern for appearing consistent would lessen the concern of observers for maintaining the appearance of consistency. From the point of view of dissonance theory it should not matter whether prior to performing a counterattitudinal behavior an individual saw someone else manifest inconsistency. Postdecisionally the observer is still confronted with the dissonant cognitions, "I believe *x* and I advocated not *x*." Thus, while impression management would predict less attitude change in the Model condition than in the Dissonance condition, dissonance theory would predict an equal amount of change.

1. Method

a. Subjects. One hundred forty-two male and female students enrolled in introductory psychology courses participated for course credits. Seven *Ss* from the Model condition and 12 *Ss* from the Dissonance condition were eliminated because they wrote attitude consonant essays. Four male students (three undergraduates and one graduate) served as *Es* and models, and rotated roles.

b. Procedures. Subjects were tested in groups of five to 10 with the condition randomly determined. When they arrived, they were led to a waiting room and informed that there would be a slight delay because individuals from the preceding hour were still at work. Five minutes later the *E* reappeared and said that one person was still working but that he would bring them in. *Ss* were subsequently led into a moderate size room with tables, chairs, a student (the *C*) writing steadily and a blackboard with the words, "If people from the preceding hour are still working, please be seated quietly."

The *E* did not initially inform *Ss* of the purpose of the study but instead instructed everyone to fill out the form containing the pretest. Embedded among seven items covering campus issues was a question concerning whether there should be a mandatory, twice-a-week physical education requirement (not a present regulation). After completing the pretest, *Ss*

³ This study was conducted independently by M.R.C. at the University of Minnesota. Special thanks to Victor Graziano, Wayne Hensche, and Jim O'Neill for their help as *Es*.

were informed that the psychology department was collecting essays expressing opinions on various student issues for use in persuasion experiments and that they would be writing on the physical fitness requirement. As the *E* was about to distribute the task booklets, he was interrupted by the confederate (*C*) who appeared to have just completed his work. In the Model condition, the *C* stated: "Can I tell you something about this essay I just wrote? I want you to understand that this isn't necessarily my real opinion in this essay. After a while you write so many essays as a student that you get so that you can write on any side of an issue without being bothered that what you write isn't necessarily what you really believe. Is there anything else you want me to do?" Throughout the presentation the *E* remained impassive saying only "hm, okay," and that the *S* could fill out his participation card. In the Dissonance condition, the *C* spoke of the legibility of his handwriting.

Following the presentation, essay booklets were distributed to the *Ss*. Two booklet forms were employed. They were identical with the exception that one asked for anti- and the other prophysical fitness arguments. These were distributed on the basis of pretest responses so that all *Ss* were asked to write counterattitudinal essays. All booklets asked for the *S*'s name and contained high volition instructions. The final page of the booklet requested them to express their final attitudes on the physical education issue. To examine possible generalized opinion shifts, an item asked for attitudes on student control of university course offerings. *Ss*' perceptions of their freedom to choose which side of the issue to argue, and their recollection of the "disturbance" caused by the earlier student were also assessed. Those in the Control condition were given a pretest, a five page questionnaire dealing with mood, and the posttest.

2. Results

A repeated measures ANOVA was performed on the pre-post scores. Because *Ss* had differing initial positions on the critical issue, scores had to be made compatible so that whether the *S*'s position was initially pro or con the score would indicate change in the counterattitudinal direction. In order to accomplish this, the scores of *Ss* who initially favored requiring physical fitness courses were transformed to the opposite side of the scale. Thus, a score of 7 indicates a counterattitudinal endpoint regardless of whether *Ss* were initially in favor of or against physical fitness requirements.

The analysis revealed an effect of groups [$F(2, 120) = 3.22, p < .043$],

pre-post measurement [$F(1,120) = 36.06, p < .001$], and a group by repeated measures interaction [$F(2,120) = 5.87, p < .004$]. The main hypotheses of this study concerned the following *a priori* contrasts: (a) the three pretest groups and the posttest control group were equivalent to each other ($F < 1$), (b) the Dissonance and Modeling posttest groups were significantly different from the three pretest groups, as well as the posttest Control group [$F(1,120) = 22.13, p < .01$], and (c) the posttest Dissonance group was significantly different from the posttest Modeling group [$F(1,120) = 4.91, p < .01$]. All three of these contrasts are orthogonal. Means are presented in Table 2.

There was no difference when Ss were initially pro or con in the perception of freedom to choose which side of the physical education issue to write on ($t = .32, p > .10$). All essays were read to insure that the Ss wrote on the correct side of the issue and to compare the amount of effort devoted to the essays. There was no difference between counterattitudinal conditions in the number of lines written in each S's essay ($t = .28, p > .10$). Finally, there was no difference between the Dissonance and Modeling conditions in the amount of attitude change manifested on the nonessay issue ($t = .76, > .10$).

3. DISCUSSION

In confirmation of the impression management prediction, the results of the second study demonstrated that Ss exposed to a model who indicated that he was unconcerned about the inconsistency of writing a counterattitudinal essay displayed less attitude change than did Ss in the standard Dissonance condition. The model did not provide information that should directly affect the individual's self-perception of his attitude, such as the degree of volition, the importance of the task, or assignment of responsibility for consequences. Rather, the C established a social precedent indicating that attitude-behavior inconsistency could be tolerated, thus reducing

TABLE 2
MEAN PRETEST AND POSTTEST ATTITUDE SCORES FOR THE THREE CONDITIONS OF THE EXPERIMENT

Group	Pretest score	Posttest score	n
Dissonance	5.54	4.53	38
Model	5.81	5.17	43
Control	5.77	5.61	42

Note. Higher scores indicate a more proattitudinal position.

the *Ss* concern about appearing to be consistent. However, the *Ss* in the *Moderate* condition still revealed some concern about maintaining consistency. Although they showed less change than *Ss* in the *Dissonance* condition, they displayed more attitude change than *Control Ss*.

D. GENERAL DISCUSSION

In addition to the two studies reported here, there is a growing number of experiments producing anomalous findings with regard to a dissonance theory but supportive of impression management theory. Gary Rivera and Tedeschi (3) found that obtaining measures of attitudes by bogus pipeline procedures eliminated the dissonance effect in the forced compliance situation. In addition anonymity eliminated attitude change in paper-and-pencil conditions. If the *Ss* cannot fake their answers for fear of detection or when no impression management dilemma exists, no "dissonance effect" is obtained. Riess and Schlenker (10) found that feedback from an audience regarding the *S's* freedom to choose to give a counterattitudinal speech affected attitude change. *Ss* who believed that others did not see them as acting freely did not display change, while those who believed others saw them as free did manifest attitude change in the direction of the counterattitudinal behavior. Goethals, Reckman, and Rothman (5) had a person survey *Ss'* attitudes toward a meat boycott three weeks prior to their writing a counterattitudinal essay on the same topic for a second *E*. Attitude change was found by the second *E*. However, three weeks later *Ss* were asked once again for their attitudes either by the first or the second *E*. *Ss* maintained consistency within *E's* even when the attitude expressed was inconsistent across *E's*. The *Ss'* attitudes seemed to vary with who asked the question.

These past studies and the ones reported herein reveal that college students are not committed to an internal criterion of consistency but only wish to appear to be consistent under conditions where interpersonal consequences for doing so are likely to be positive or where doing so will avoid negative evaluations or punishments from others. Impression management theory regards the necessary conditions for obtaining a dissonance effect in the forced compliance situation as exactly those in which the individual needs to find some excuse or justification for his action. Just about the only means by which he can do this, given the constraints of an attitude questionnaire, is to indicate that he believes sincerely in what he has advocated—a signal that he does not regard the position as one that could harm anyone. Although the *E* may consider him wrong (and our first

experiment does not indicate the Ss believe that he does), the S at least appears consistent and removes the possibility of being perceived as malevolently trying to hurt others even when lacking the sincerity of belief associated with counterattitudinal advocacy.

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COLLEGE STUDENTS' REACTIONS TO SOCIAL PSYCHOLOGICAL EXPERIMENTS INVOLVING DECEPTION *

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SUMMARY

Male and female college students ($N = 655$) participated in 15 experiments involving various degrees and types of deception. After a thorough debriefing, they rated their experiment on five items dealing with its value, the offensiveness of the deception, and willingness to have a friend participate. The generally positive evaluation of these experiments is discussed in terms of the use of college students and procedural factors which increased their choice about whether to participate.

A. INTRODUCTION

Analysis of potential risks to human Ss is required both by APA principles (1) and by regulations administered by the Department of Health, Education, and Welfare (3). Both also require informed consent when risk is present. However, this two-step decision process will not suffice if deception *per se* is a risk to Ss. Along these lines, psychologists have been concerned about the ethicality of deceiving Ss even when the content of the deception is not harmful (e.g., 14, 15). Unlike the question of what is ethical, the question of what constitutes a risk to Ss can be investigated empirically (*cf.* 7). Empirical assessments are also advantageous to Es now that judgments of risk increasingly determine which research will be permitted.

Do Ss find deception objectionable and unjustified? Epstein, Suedfeld, and Silverstein (4) investigated potential Ss' (college students) views of the implicit contract between any E and Ss. Deception tended to be seen as

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¹ Portions of this paper were presented at the Eastern Psychological Association meeting, New York City, 1976. Reprints are available from the author at the address shown at the end of this article.

appropriate although not desirable. Homes (9) found that after actual experience with a series of deceptive experiments, college students perceived experiments in general as more scientific and valuable and intended to cooperate more. In contrast, Cook, Bean, Calder, Frey, Krovetz, and Reisman (2) found that college students with a prior history of participation and debriefing believed *Es* less, considered experiments to be less scientific and less valuable, and reported caring less about understanding and following directions. Ratings of liking, legitimacy, and annoyance were not affected by prior history.

The nature of the previous experiments, of course, matters (11). Three studies have compared potential *Ss*' perceptions of a variety of hypothetical experimental procedures. Sullivan and Deiker (17) found that college students were more tolerant than psychologists of controversial experiments, including their use of deception in recruiting *Ss*. The deception was perceived as unethical by 23-51% of the students, depending on the experiment rated. The deception was perceived as justified, given that experts considered the experiment important, by 61-84% of the students. Similarly, Wilson and Donnerstein (18) described nonreactive field experiments to members of the general public. The experiments were rated as unethical by 18-47% of the respondents, and as justified by their scientific contribution by 27-49%; other questions showed comparable differentiation. Many of the experimental procedures which Farr and Seaver (5) had students rate involved deception, but the students evidently were rating the content of the deception (i.e., an electronic device to which you are attached begins to smoke) rather than rating deception.

The present study goes beyond previous work in two respects. First, an analysis of the total impact of deceptive procedures must include the information usually presented in debriefing. There is evidence that debriefing can return self-evaluative measures to base level even after a threatening deception (10). There is, however, no evidence regarding *Ss*' perception of the legitimacy of specific experiments after knowing the purposes of the deception and of the research itself. An additional requirement for an investigation of *Ss*' attitudes toward deception in specific experiments is that the *Ss* actually experience, rather than simply receive descriptions of, the experiments. After all, asking *Ss* to predict how they would react can be considered the essence of role playing (6), and the inadequacy of role playing for obtaining natural reactions is the rationale for using deception. It would be unethical to expose *Ss* to procedures which are predicted to be risky in order to ascertain whether they are indeed

objectionable, but it is possible to collect data on Ss' reactions to procedures which are used to test other hypotheses. The present investigation assessed Ss' attitudes after debriefing toward the deception and overall value of experiments involving varying degrees and types of deception.

B. METHOD

1. Subjects

Ss were 655 Bucknell University undergraduates, approximately half male and half female. Except for one experiment they were volunteers, although there were differences in the conditions under which they volunteered. Except in three experiments, Ss were solicited by telephone from the university directory or the psychology S pool. The S pool consists of volunteers, generally 85-90% of introductory psychology students, who retain the option of not participating when contacted about a specific experiment. For the eight most recent studies (described last below), students had joined the S pool with the understanding that some of the experiments might involve deception; and, when they reported for the experiment, they were told that they could cease participation at any time. This is essentially the procedure described by Holmes and Bennett (12) for obtaining informed consent in deception studies. Ss received no compensation for their participation in any of the studies. Each study included some Ss with previous research experience; however, Ss who had prior experience with deception were avoided.

2. Procedure

Experiments were conducted by advanced undergraduate and Masters students in psychology.² Ethical considerations were discussed with the Es, potential risks were minimized in designing the experiments, and the experiments were approved by departmental review procedure. The tasks given Ss during the experiment were not discrepant with the information used to solicit their participation, although the soliciting information was brief and did not fully reflect the purpose of the experiment. At the time of the experiment, information was limited or distorted only to the extent considered necessary for valid tests of the hypotheses. Ss received careful, educational debriefings which explained the hypotheses, the manipulations'

² The author would like to express her appreciation to the Es who cooperated in collecting the data.

relationship to those hypotheses, and the necessity to withhold information from the *Ss*. An offer to answer questions was included, as was the *E*'s name in case questions arose later. In 12 of the experiments, *Ss* were debriefed at the end of the experimental session; in two they were debriefed at the end of their second experimental session, and in one they were debriefed and given the questionnaire by mail. After the debriefing *Ss* were asked to indicate their present feelings about the experiment on an anonymous questionnaire. They were encouraged to be very honest in order to help in designing future experiments. The *Ss* measured their own reactions on the five items listed in Table 1, using five-point scales from 0 (not at all) to 4 (very much). A space for comments was also provided.

3. Experiments

Although the same methods could be applied to other human research, 15 social psychology experiments conducted between March 1975 and May 1976 were used. Only a few experiments conducted in that period were omitted; those were less typical of current American social psychology and/or required no debriefing. *Ss* were tested individually in Toothbrushing, Alcohol, Pledges, Preconceptions, Closed Circuit, Speaking, and Puzzle, and in groups in the others. Control groups who were not subjected to deception were omitted from this investigation. Brief descriptions of the procedures common to all other conditions of each experiment are presented below. In addition, data were separable according to experimental condition for Toothbrushing, Alcohol, Similarity I, Preconceptions, and Closed Circuit, and those conditions are noted in the descriptions. In other experiments, experimental conditions did not vary in severity of deception, or *Es* neglected to classify the questionnaires according to experimental condition.

a. Toothbrushing. *Ss* were asked to try to convince another person of the disadvantages of toothbrushing. Debriefing revealed that the other person was a confederate (*C*) of the *E* and that the speaker's attitudes were of interest rather than the listener's. Data were separable according to the feedback received from the *C*: no feedback and four combinations of feedback depending on whether the *C* was convinced and whether she perceived the *S* as sincere.

b. Alcohol. *Ss* believed they were connected to a GSR meter which measured their physiological reactions to items concerning the evils of alcohol. Debriefing revealed that changes on the meter were controlled by the *E*. Data were separable according to whether the *Ss* could observe their GSRs or not.

TABLE 1
RATINGS OF EXPERIMENTS

Experiments	n	Worthwhile as knowledge sought		Worthwhile as learning experience		Annoyed— details withheld		Mind being misled		Willing for friend to participate	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Toothbrushing	30	3.1	.6	2.8	1.2	.3	.6	.3	.6	3.4	1.0
Alcohol	24	3.0	1.0	2.3	.9	.1	.4	.0	.2	3.5	.7
Newspaper	64	3.0	.8	2.2	1.1	.2	.5	.2	.6	3.6	.7
Opinions	58	2.9	.8	1.7	1.1	.4	.7	.6	1.0	3.2	.9
Similarity I	52	2.6	.7	1.6	.8	.5	1.0	.5	.9	3.1	.9
Similarity II	69	2.3	.9	1.1	1.1	.9	1.2	1.0	1.2	2.6	1.3
Pledges	15	2.7	1.2	2.6	1.0	.4	.7	.3	.6	2.7	1.3
Preconceptions	27	3.0	.9	2.8	1.0	.1	.4	.1	.3	3.6	1.1
Closed Circuit	44	3.5	.6	2.7	.9	.3	.6	.2	.4	3.6	.7
Speaking	32	3.3	.8	2.9	1.0	.3	.6	.3	.6	3.4	.8
Puzzle	61	3.7	.5	3.0	.9	.1	.4	.2	.5	3.8	.5
Sports	29	3.0	.8	2.3	1.0	.2	.4	.3	.5	3.1	1.1
Permanence	27	2.7	1.1	1.7	1.2	1.7	.5	1.7	1.3	1.3	1.0
Dogmatism	38	2.6	.6	2.2	1.2	.6	1.1	.4	.8	3.1	1.0
Bias	85	3.3	.6	2.6	1.1	.2	1.0	.4	.8	3.3	1.0

c. *Newspaper*. Ss were asked to read a newspaper account of a true incident and to determine how responsible a tour guide was for an accident at a factory. Debriefing revealed that the incident was fabricated.

d. *Opinions*. Ss were asked to participate in an experiment on opinions and first impressions; they read about a person making a discovery or having an accident while cooking or doing chemistry. Debriefing revealed that the study concerned attribution of responsibility in several situations.

e. *Similarity I*. Ss completed a personality profile containing innocuous items. The questionnaire was supposedly scored and was returned to the S marked to indicate the degree of similarity between the S and another person. The S read about a supposedly true incident involving that person. Debriefing revealed that the personality test was not valid, that the degree of similarity was arbitrarily assigned, and that the other person did not exist. Data were separable into high and low similarity groups and a third group who did not complete the personality questionnaire.

f. *Similarity II*. Same Es and procedures as Similarity I except that Ss were not volunteers. They were introductory management students whose instructor allowed the experiment to be conducted during the class period.

g. *Pledges*. Ss were sorority pledges who were shown biased videotapes of a fraternity function which was generating campus controversy and in which they would be expected to participate as pledges. Ss were debriefed by mail one to two weeks later, after the fraternity event took place and Ss had been interviewed by telephone. Ss were informed that the tapes were biased and that the Es were interested in their decisions about participation and their methods of dealing with dissonance about participation.

h. *Preconceptions*. Ss volunteered to be interviewed on personal questions, such as what they would do if their unmarried sister became pregnant. Such an interview was conducted; but Ss were also given a preconception of the interviewer by a C, and their eye contact with the E was measured—aspects which were not apparent until debriefing. Data were separable according to positive or negative preconception crossed with sex of S.

i. *Closed Circuit*. Each S gave a two-minute talk on a topic of his/her choice while watching a person on a TV monitor who was supposedly also watching him or her. Debriefing revealed that the listener was actually videotaped to represent one of three levels of eye contact and that the speaker's eye contact was being measured. Data were separable by sex of S crossed with high, medium, or low eye contact.

j. *Speaking*. Ss competed in a speaking contest against another person

in front of a panel of judges. The panel always chose the *S*'s competitor as a potential member. *S*s later discovered that the contest was rigged, that the competitor and panel were *C*'s, and that the *E* had been attempting to manipulate their attributions for failure in an attempt to understand aspects of therapy.

k. Puzzle. *S*s were asked to solve puzzles and received various rewards for exceeding false norms. Then they were left alone for a few minutes and told to do whatever they wanted including doing more puzzles. They were aware that they were being videotaped during the entire study. They were told during debriefing that their behavior during the "free" period was the main dependent variable, that the norms were arbitrary, and that the study related to intrinsic motivation in education.

l. Sports. Any student approached in certain freshman dorms was invited to join the *S* pool and participate in this experiment. *S*s were asked to write essays against university funding for sports, including intramurals; a student committee supposedly would use these essays to compile an article for the student newspaper advocating this position. Small financial incentives were offered for this help. After writing the essays, they completed an attitude survey for another *E*. Then they learned that the attitude survey was the dependent measure for the first experiment, that their essays would not be used, and that they would not be paid. Interestingly, about half the *S*s refused to write the counterattitudinal essay.

m. Permanence. Any student approached in certain freshman dorms was invited to join the *S* pool and participate in this experiment. After writing essays and then filling out an attitude questionnaire, *S*s were told that they would have to return in eight days to obtain the results and give the *E* feedback. No debriefing was delivered after the first session. When *S*s returned, they were informed it would be necessary to answer the attitude questionnaire again. Debriefing revealed that the study dealt with the permanence of attitude change.

n. Dogmatism. *S* pool members in a psychology class were approached and volunteered to participate as an in-class exercise. *S*s completed a personality questionnaire for one *E* and then studied for a aptitude test and made predictions about it for another *E*. Debriefing revealed that it was one experiment with the purpose of relating individual differences in "flexibility" to dissonance reduction.

o. Bias. *S*s answered a questionnaire about women. No debriefing was given at that point. Weeks later they were contacted for another experiment in which they read a description of a college man or woman and were

asked to help match that person with an appropriate job at a nearby day camp. Debriefing revealed that the two experiments were related and dealt with the attitude-behavior relationship; Ss also found out that neither the person nor the camp existed and that the potential jobs corresponded to traditional sex roles.

C. RESULTS AND DISCUSSION

The ratings for each experiment are presented in Table 1. In addition, analyses of variance were conducted for those experiments with data separable according to experimental condition. No significant differences between conditions were found except in Closed Circuit. The videotaped listener was male; female Ss were higher than males on worth as knowledge, $F(1,38) = 6.14, p < .02$; and male Ss who received high eye contact were less willing than other S groups to have a friend participate, $F(2,38) = 3.76, p < .04$.

All experiments were rated above the midpoint on their worth in terms of the knowledge sought. Ss were less impressed with the value of these experiments as learning experiences; this is somewhat disturbing because the debriefings were designed to be educational and because many universities require Ss to participate in research, using the rationale that it is an educational experience. Although we usually think in terms of the Ss' learning about research, many Ss wrote comments indicating that they could not judge the value as a learning experience until they found out the results of the experiment, and others indicated that they interpreted the question in terms of learning about themselves (e.g., the inconsistency of their attitudes and behavior). Other comments indicate that additional benefits to the individual, such as fun, were considered by Ss.

Ss generally raised little objection to the withholding of information or to being misled; and satisfaction generally was expressed by their willingness to have a friend participate, a question included to obtain an overall analysis of the risks and benefits. It has been suggested that Ss' responses in this investigation may reflect the "good S" role and therefore that deception should be used to determine Ss' true attitudes (i.e., by having a C talk to the S after debriefing). This is an example of deception which would probably undermine the relationship between E and S and reduce Ss' trust in psychologists, as discussed by Kelman (14, 15). Furthermore, this additional duplicity is not necessary. In each use of the present questionnaire, Ss knew that their experimental session was over and the E had all the

necessary data, it was also clear that the postdebriefing questionnaires were anonymous and would be used in designing future experiments. Ss were therefore offered the opportunity to protect potential Ss, including themselves; if they instead responded as Es would prefer, for whatever reason, they must have found the risks acceptable.

The sophistication of these Ss may be important in understanding their favorable ratings. An earlier form of the questionnaire attempted to obtain an overall rating by asking Ss how likely they would have been to participate in this experiment if they had known all the details from the beginning, to which many replied that their data would have been invalid in that case. Also, many in this investigation wrote comments indicating that although the deception may not have been pleasant, it was necessary. Although college students are the most common psychology Ss, their tolerance and understanding of research may be no more typical of the general population than their other characteristics. Other segments of the population may be less impressed with the need for deception in order to advance the E's knowledge.

Even with college students, these ratings may have been favorable largely for the following reasons: All Ss knew they were participating in research. Most were volunteers. The power differential between E and S was not large (as evidenced by the refusal of one-half the Ss in Sports to cooperate). Most knew that they might be deceived. Taken together, these factors increase the S's choice and indicate implicit approval of the research by those who do as they are instructed. The last factor is probably typical of most campuses whether Ss are explicitly forewarned of possible deception or not. As in the last eight experiments, a general forewarning can be used with volunteers to obtain informed consent for deception, apparently without altering the data (8, 12, 13). Choice can further be increased by reminding Ss that they are free to stop at any time.

These 15 experiments vary on other dimensions besides degree of deception; it is apparent both that deception *per se* was not perceived as a risk, within the limits tested, and that Ss' attitudes were influenced by the other dimensions. For instance, Opinions, which involved deception only in the sense of withholding the hypotheses and the existence of other experimental conditions, was rated no higher than Speaking, in which the content of the deception was threatening, and Toothbrushing, which also involved elaborate deception. Although comparisons of experiments are therefore confounded, data such as these have immediate practical application in decisions about individual experiments, especially as experiments from one

laboratory often use similar procedures. Decisions are most difficult in the case of experiments rated unfavorably, but data from other experiments can be helpful in tentative isolation of the offending aspects. All procedures which are unique to offensive experiments can be avoided in future designs, or attempts can be made to offset the negative factors with procedures that are unique to well-liked experiments. In the latter case, additions to subsequent questionnaires could reveal information about the specific procedures suspected of being pleasant or unpleasant.

One study in the current investigation was not rated favorably: Permanence received the least favorable ratings by far on the last three questions. None of the *Ss* in this experiment included comments explaining their reaction, but there are several possibilities. First, Permanence did not have the redeeming value of being especially enjoyable, and the second session (near the end of the semester) made it time-consuming and inconvenient. Moreover, *Ss* were left in a potentially altered state for a week before debriefing. This may have been especially annoying to *Ss* who had argued for a higher cut-off for the Dean's List or an increase in tuition; the inclusion of *Ss* who wrote about their hobbies in these data actually may have moderated the dislike for this study. *Ss* were not debriefed immediately in Pledges either; although that experiment is not rated as highly as some others, *Ss* did not object to the deception even though it could have affected their attitude toward participation in the fraternity event. However, the manipulation was less effective in Pledges than in Permanence, and the second contact was more convenient. In addition, in Permanence *Ss* may have felt coerced into returning for the second session, in spite of hearing at the beginning that they could cease participation at any time. Besides Permanence, the least favorable ratings on every measure were received by Similarity II, in which *Ss* were not explicitly offered choice about whether to participate. In fact, Similarity II was rated significantly worse on four of the measures than Similarity I, in which *Ss* were called from the phone directory and asked to volunteer; ($F(1,119) = 5.18, p < .025$; $F(1,119) = 6.57, p < .012$; $F(1,119) = 3.22, p < .075$; $F(1,119) = 4.75, p = .031$; $F(1,119) = 4.79, p < .031$; for the five items in order. Several *Ss* in Similarity II commented that only volunteers should be used. Ethically, direct benefit and minimal risk to *Ss* seem most important when *Ss* are not volunteers; from these results it seems that required participation may in itself reduce the worth and increase the objections to procedures.

This investigation has demonstrated some conditions under which *Ss* find deception acceptable; however, some of the conditions also limit the

generalizability of the results of the experiments. Experiments which fall outside this "comfort zone"—e.g., those using involuntary or unvoluntary or noncollege Ss—will continue to be conducted, presumably on the basis of some risk/benefit analysis. Such analyses will be more valid if based on predictions of Ss' reactions which are obtained from other Es and from potential Ss; these predictions can then be verified by assessing the reactions of the actual Ss.

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OPEN-CLOSED MINDEDNESS AND CHOICE OF UNIVERSITY PROGRAMS*

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SUMMARY

Comparisons between groups on the basis of dogmatic tendencies are traditionally made on the grounds of summated scores. Given the multidimensionality of the D-Scale, this study explored the possibility of group comparison on an item rather than a summated score basis. The Ss ($N = 471$; male 250, female 221) were enrolling in various first year university programs. Significant differences did occur in specific items of the D-Scale, and in particular between Ss enrolling in the Arts and the Science programs. Factor analysis of Ss' responses raised the possibility of the significantly different items defining a particular facet or aspect of dogmatism.

A. INTRODUCTION

An interpretation of Atkinson's (1, 2) model of risk taking suggests that in a situation involving a success-failure dimension, choice becomes a function of both the fear of failure motives and the need for achievement. It can be postulated that students enrolling in various programs of a university are both entering a risk taking model, and making a vocational choice that Holland (5, 6) and many other researchers consider is, in part, an expression of personality.

In the present study a comparison is made of the dogmatism scores (D-scores) of students enrolling in five programs of study at a university. Generally studies of this nature have compared the summated scores of groups of respondents who have completed the D-Scale (10). For instance, Low and Shaver (8) found no overall significant differences in open-closed mindedness of students majoring in various fields at Utah State University ($N = 1,016$) and Weber State College ($N = 893$).

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The existing evidence (4, 9) suggests that the D-Scale is a multidimensional rather than unidimensional instrument. Consequently, a comparison of scores on particular items in the D-Scale may be more valuable than a comparison of summated scores.

B. METHOD

1. Subjects

The Ss were 471 students enrolling in their first year of study at the University of New England. Of this total ($N = 471$), 172 enrolled in the Arts program, 53 in Economics, 88 in Science, 84 in Rural Science, and 74 in Agricultural Economics.

2. Instrumentation and Scoring

One of the tests completed by enrolling students was Form E of the D-Scale (11). This 40 item instrument was checked on a scale running from "Agree Very Much" to "Disagree Very Much." The following example illustrates the numerical score associated with each of the six check points:

Item No. 3 There is so much to be done and so little time to do it in. $A+ = +3$,
 $A = +2$, $A- = +1$, $D- = -1$, $D = -2$, $D+ = -3$.

3. Statistical Analysis

Sets of data (D-scores) were available for analysis from the respondents enrolling in each of the five university programs. In the first stage sets of data were examined for equality of group dispersion matrices. This assumption of equality of dispersion (variance-covariance matrices) is considered analogous to that of homogeneity of variance in the univariate F -ratios test of equality of scores (3).

Following an examination of group dispersion matrices, the univariate F -ratios for the 40 items of the D-Scale were calculated. These F -ratios indicate whether the scores for groups of respondents differ with regard to particular items of the D-Scale. If D-Scale items were found to differ significantly, a multiple Scheffé test (11) was used to establish the identity of groups exhibiting differences.

C. RESULTS

When the result of the test for equality of group dispersion matrices (Box-Bartlett $M = 4388.76$, $F = 1.043$, $p = .045$) is considered in relation

to an .05 level of significance, some evidence is provided for difference in the data sets. As this particular test is considered to be quite powerful (3, p. 228), a $p = .045$ may not be very conclusive evidence for advocating the existence of a significant difference in the data sets.

An examination of univariate F -ratios suggested that six items from the D-Scale were significantly different at the .01 level. These items were as follows:

Item 4. While I don't like to admit this even to myself, my secret ambition is to be come a great man, like Einstein, or Beethoven or Shakespeare.

Item 12. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

Item 17. The present is all too often full of unhappiness. It is only the future that counts.

Item 20. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what others are saying.

Item 30. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our side.

Item 36. The main thing in life is for a person to want to do something important.

It was necessary to examine the mean scores of the five groups of students for each of the significantly different items. Table 1 reports the results of multiple Scheffé tests. Significant differences ($p < .01$) between the five groups of students for each of the six D-Scale items are shown. When the mean scores for a particular item were found to be significantly different, the item number was placed in the cross reference table. For instance, Table 1 shows that a significant difference occurred between Science and Economics students with regard to Item 30.

An examination of Table 1 clearly indicates the major significant differences existing between Arts and Science students and Arts and Agricultural Economics students for each of the six D-Scale items.

In Table 2 the group mean scores for the six D-Scale items previously reported as containing significant differences are presented. For each of the six items, mean scores for students enrolled in the Arts program suggest they "disagree" more strongly with the particular statements than Science or Agricultural Economics students. On the other hand, as no significant differences occurred on these six items between Rural Science and Agricultural Economics students, the Rural Science and Science students, it would seem to suggest a reasonable degree of similarity in their responses.

TABLE 1
RESULTS OF SIGNIFICANT SCHEFFÉ TESTS ON D-SCALE ITEMS

Programs	Arts	Science	Economics	Agricultural Economics
Arts				
Science	4, 12, 17 20, 30, 36			
Economics	4	30		
Agricultural Economics	4, 12, 17, 20, 30, 36	20	4	
Rural Science	36		4, 12, 20	

Note: Numbers to D-Scale items. $p < .01$.

D. DISCUSSION

Although the test for equality of dispersions provided some evidence ($p = .045$) of difference in the five sets of data, it was felt that this result should be interpreted with caution. Significant differences were found to exist ($p < .01$) in mean group responses for six items of the D-Scale. The major trends were the significant differences between the responses for Arts and Science students, and Arts and Agricultural Economics students. For each of the six items, Arts students tended to "disagree" more strongly with item statements than did either Science or Agricultural Economics students. As the items of the D-Scale are worded so that "agreement" is considered as closed-minded, and "disagreement" as open-minded, it is possible to suggest that some evidence exists to support a contention that this particular sample of Arts students held certain views that were less dogmatic than those of either Science or Agricultural Economics students.

TABLE 2
GROUP MEAN SCORES FOR D-SCALE ITEMS CONTAINING SIGNIFICANT DIFFERENCES

Program of study: mean scores.					
D-Scale item no.	Arts	Science	Economics	Agricultural Economics	Rural Science
4	-.72	.03	.68	.09	-.49
12	-.90	-.28	-.74	-.15	-.69
17	-1.74	-.88	-1.42	-1.15	-1.29
20	-.81	-.61	.51	.14	-.55
30	-.77	.11	-.74	-.16	-.39
36	-.33	.33	.08	.45	.60

The fact that a larger proportion of females enroll in Arts as compared to Science or Agricultural Economics courses may seem a possible explanation of the results obtained in this study. This possibility was examined, but produced no evidence contrary to the already reported findings.

In an endeavour to explain why particular items in the D-Scale differed significantly between groups of students, the dimensionality of the student responses was explored by factor analysis (Varimax criterion, eigenvalue > 1.0 , factors based on items having rotated loadings $> .35$). The retained solution confirmed the multidimensionality of the D-Scale, with the 15 extracted factors accounting for 59% of total variance. An examination of the solution indicated that five of the six items previously reported as exhibiting significant differences loaded on the same factor.

Although the interpretation of factors is complex, it appears that this factor concerned aspects of self-proselytization and self-aggrandizement. Clearly it would be rather tenuous to suggest that students enrolling in specific university programs differ with regard to an attitudinal dimension described as "self-aggrandizement and self-proselytization," but the possibility exists.

In choosing to enroll in a particular course of study, university students probably experience interaction between a number of factors. These factors would include the personality dimensions of enrolling students and the notion of possible success or failure in the course of their choosing. The works of Holland (5, 6) and Katz and Fleming (7) suggest that differences would be anticipated in the attributes of students enrolling in different programs of a university. In particular, these studies depict considerable disparity in the attitudinal structures of Arts and Science students. What is surprising in the current study is that this disparity was evidenced in relation to specific items of the D-Scale. The nature of secondary school subjects completed in preparation for the Arts and the Science programs, and the apparent discrepancy in perceived expectations associated with these "two cultures" would seem to ensure that some distinguishing attributes would exist in the nature of students enrolling in these particular courses of study.

The apparent differences in responses of enrolling Arts and Agricultural Economics students seems to suggest that these programs attract a somewhat different type of student. On the other hand, the degree of similarity between responses of Rural Science and Agricultural Economics students, and Rural Science and Science students suggests a trend in the nature of students taking such programs.

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THE EMERGENCY EVACUATION OF A PSYCHIATRIC HOSPITAL*

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SUMMARY

As a result of imminent flood conditions expected from a hurricane, South Beach Psychiatric Center implemented emergency procedures and evacuated 200 psychiatric inpatients to a state developmental center five miles away. Following the evacuation, it was decided that a study of the experience would provide valuable management information regarding staff and patient behavior and hospital emergency procedures. The study, based on interviews with 12 patients and 12 staff members, revealed that the principles of crisis theory can be applied at the institutional level. In addition, it was found that the "expected" model of the organizational structure was revealed under stress.

A. THE EMERGENCY EVACUATION OF A PSYCHIATRIC HOSPITAL

The emergency evacuation of a psychiatric hospital is an unusual phenomenon. An administrator would naturally hesitate to evacuate a psychiatric hospital with the prospect of disruptions in patient care and the threat to patient safety that such action would imply. However, undue hesitation and delay in making a decision has equally serious implications. Although the literature on hospital evacuations is sparse, there is some evidence of the adaptive capacity of psychiatric patients during disaster situations, and broader evidence of the adaptive capacity of the general population under such stress (1, 2, 3, 4, 5, 6, 7, 8).

This paper presents our experiences in evacuating a hospital, reports on a survey of patient and staff perceptions of this unusual event, and offers some concrete suggestions for future planning.

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The hospital, a state psychiatric facility with 300 inpatient beds, services a mixed population of acute and chronic psychiatric patients. The hospital, organized into geographic units, provides services to 1.5 million people in West Brooklyn and Staten Island. As can be expected in a decentralized system, the staff is closely identified with their respective units.

The Center is located on a 50 acre shorefront tract of land that is part of the Gateway National Park Preserve. The building foundations average no more than five feet above mean sea level, and the main generators are located at or below that level in the basement of our buildings. Previous hurricanes in the area during the late 1950's caused dangerous flood conditions and required the use of rowboats. A previous Army Engineering survey had suggested the establishment of a seawall to protect the area from future floods; however, this wall was never constructed.

On August 9, 1976, Hurricane Belle threatened the Center; tides were expected to reach 10-15 feet above normal, and Civil Defense was recommending that residential shorefront areas be evacuated. By that evening, the local Civil Defense called and recommended that we evacuate the hospital. Confronted by the probable isolation of the hospital from emergency services, the potential loss of all electrical power, and the recommendations from Civil Defense, we decided to evacuate our patients and staff and to relocate them at a state developmental center five miles away. In anticipation of this decision, we had already (a) convened several emergency planning meetings throughout the day, (b) sent as many patients as possible home on pass to their families, (c) held community meetings with patients on each of the treatment units to prepare for the move, and (d) assigned staff to the relocation site in advance of the arrival of our patients. Exhausting all efforts to effect alternate dispositions, we still found ourselves with 200 patients. Thus at 8 p.m., in a driving rain, we began the process of transferring patients and searching and locking buildings. The evacuation took approximately two hours to accomplish.

The storm broke by early morning and, although the tides had not reached predicted levels, there was considerable flooding at our Center which had forced shutdown of the generators to prevent short circuiting and electrical fires.

On the basis of the administrative assumption that interruption of the "crisis atmosphere" would lead to increased loss of patients' goal direction and increased agitation, the return to the Center was initiated as early as possible the morning of August 10, 1976.

During the entire 16 hours of evacuation, relocation, and return, there

were no injuries to staff or patients, and the entire process was essentially uneventful, with the exception of one patient who hid in one of the buildings and managed to evade a thorough search for him.

In the director's absence, the deputy directors directly participated in the evacuation of the hospital and in the supervision of patients and staff at the relocation site. They remained with the patients and staff throughout the entire crisis.

B. POST EVACUATION SURVEY

In reviewing the literature we found that although there is an extensive body of research related to disasters, there has been very little written about experiences related to the evacuation of psychiatric hospitals. We felt, therefore, that the experience was unusual in this respect, and we decided to survey the staff and patients who had been involved in the crisis, hoping to obtain an impressionistic view of the experience from both groups.

To obtain an unbiased view of the experience, we assigned a division chief of one of the geographic services, who had not been present during the evacuation, to conduct the postevacuation interviews of patients and staff. The survey was completed within two weeks of the event. Interviews were conducted primarily with evening staff, since this shift was the most actively involved in the evacuation. Twelve of the 64 staff members who were involved in the evacuation were selected for questioning. Twelve of the 200 patients who were involved in the evacuation were selected for questioning provided that the patients were verbal and the interviews would be conducted with the consent of the patient and the therapist.

Open-ended questions were used during the interview and modal responses were noted in the following areas: impressions of the experience, assessment of the patient behavior, changes in staff/patient interactions, changes in staff/staff interactions, and the decision process.

C. IMPRESSIONS OF THE EXPERIENCE

Staff overwhelmingly expressed positive impressions about the evacuation. Reactions ranged from feeling excited and exhilarated by the crisis nature of the experience to feeling apprehensive with an undercurrent of annoyance that the evacuation proved to be unnecessary. No one, however, expressed fear or threat to their physical safety because of the storm. Patients felt, as did the staff, that the storm was not dangerous. However,

patients did express a fear of loss of place, describing it as "a fear of being lost or left behind." Notably, those patients who had spent time in older state institutions expressed fears that they would be left behind at the relocation site and not returned to our hospital. Similarly, patients also expressed concern that there would not be sufficient food, transportation, or accommodations for all of them.

D. ASSESSMENT OF PATIENT BEHAVIOR

Staff commented that patients maintained control of their behavior throughout the entire evacuation. Some thought that the patients were "hiding" their fear and attempting to act as normal as possible. Only two patients required emergency medications during the 16 hour evacuation in contrast to 20 emergency doses which are usually given during the same time period. Throughout the crisis there was a marked absence of agitation among the patients, although some reported that following relocation, they felt confused and the presence of supportive and familiar people did not help to alleviate this feeling. Although patients experienced fear and anxiety, they were cooperative and adapted appropriately to their new circumstances. As one staff member described it: "There were fights over mattresses among the healthier patients, but everyone was remarkable."

Patients stated that they were "surprised to see how well other patients behaved and controlled themselves." Odaira, Kato, and Fukuda (6) in studying the reactive attitudes of psychiatric patients to the Tokachioki earthquake noted that mental patients surveyed within one week of the disaster recalled their behavior to be calm and reasonable, though their memory of the day in question was impaired. Little difference was noted between the reactions of mental patients, medical patients, and normals.

E. CHANGES IN STAFF/PATIENT INTERACTIONS

Interpersonal relationships between staff and patients were described as "less formal than usual" during the crisis. As a result of the immediacy of the situation, the patients and staff reported experiencing a change in the unit milieu—patients and staff were asked to pitch in and assist with the work of evacuating units, gathering sheets and personal belongings, moving mattresses etc. Work was divided more democratically than usual, where a more professional staff/patient relationship exists. Staff stated that they gave more than usual to the patients in a concrete way during the crisis (cigarettes, candy, blankets, etc.) in an effort to keep patients calm

and feeling secure. Patients, similarly, reported that they shared more with each other.

Since the administration had believed that the hospital was operating as a decentralized, therapeutic community, the reported change to a more democratic model brought into focus the discrepancy between the illusion of what was believed to be the operational model and the actual operational realities. This finding also illustrates that under stress the staff moved toward the "expected" therapeutic community model of behavior, rather than disorganizing or moving towards an authoritarian model of staff-patient interaction as has been reported elsewhere (3).

F. CHANGES IN STAFF INTERACTIONS

Morale remained high throughout the evacuation. Administrators who participated in the crisis were viewed positively by staff. Administrators who had previously been negatively viewed by staff as "depriving authority figures" were now seen as supportive and part of the actual work force, even when this was not substantiated in fact. For example, one staff member who had seen the clinical director in an elevator which was being used to transport mattresses assumed that the clinical director had actually been involved in moving the mattresses himself; he was not.

Conversely, negative attitudes developed towards staff and administrators who were absent or did not participate in the crisis. Relationships between staff members and between staff and their supervisors, who were present, were enhanced by their common participation in the crisis. Non-participants were interpreted as abandoning fellow staff members and became the focus of staff anger.

Following their return to the Center, the staff and patients remained in holiday spirits and everyone expressed feelings of pride for a job well done. The return to the usual routine ward activities was met with resistance and some staff protested that they deserved a rest from the usual routine.

Upon their return, staff had the expectation that they would be relieved somehow and felt that they deserved a reward for their hard work. As activities returned to normal, the mood changed from exhilaration to disappointment. One administrator remarked that he just could not be thanked enough to compensate for all his efforts.

The experience of abandonment was not limited to patients. The Center's administrators expressed similar feelings because of the lack of assistance and input from higher levels of authority within the state. Leaders,

therefore, experienced the abandonment which the staff did not and which the patients feared.

G. THE DECISION PROCESS

Though some staff criticized the decision to evacuate—stating their belief that it was unnecessary—they also objected to the way in which the evacuation procedures had been planned, noting that the actual decision to evacuate, if it was going to be made, should have been made earlier to avoid the extended period of uncertainty. Waiting periods for transportation were also cited as a cause for unnecessary anxiety. Clearly, during a crisis there is a staff need for early and clear decision making and definition of direction by the leadership. Delay in making decisions leads to high anxiety which can be destructive to staff functioning. This is confirmed more dramatically in Doob's study (3).

H. CONCLUSIONS

Crisis at the institutional level reveals strengths and weaknesses, as well as the actualization of the expected model of the organization. The potential for change in staff attitudes in response to effective and participative leadership is also demonstrated.

Our experience is consistent with former crisis studies which demonstrate that patients do have behavioral resiliency and rally in times of external crisis (3, 4, 6). Therefore, there can be an expectation that patients can play an active role in a variety of activities should a future crisis occur.

In crisis situations, high level administrators should be present and highly visible for supportive, as well as for administrative purposes. Their presence effectively counteracts staff fears of abandonment and reduces staff anxiety.

In reviewing the evacuation, we found that it was accomplished smoothly and without untoward incidents. Staff morale remained high and the degree of disruption was minimal and far below that initially feared. However, it must be said that the evacuation occurred under weather conditions that were uncomfortable but were not perceived as immediately dangerous to life. Had conditions been more severe at the time of the evacuation, greater chaos could be anticipated (2, 4).

Therefore, we believe that a decision to evacuate should be decided early and should not be delayed. The decision should be reached and communicated prior to the apex of the crisis. Our experience indicates that an

administrator should not be overly fearful in making such decisions. To succumb to fears about the difficulty which any decision involves could result in delays which actualize the administrator's worst fears.

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CROSS-CULTURAL NOTES

Under this heading appear summaries of studies which, in 500 words or less, provide comparable data from two or more societies through the use of a standard measuring instrument; additional details concerning the results can be obtained by communicating directly with the investigator.

The Journal of Social Psychology, 1979, 107, 125-126.

RACIAL PREFERENCES AMONG SOUTH AFRICAN WHITE AND BLACK PRESCHOOL CHILDREN*

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Some American studies² have shown that children aged three and four years display a marked preference for their own racial groups when shown black and white dolls or pictures. However, more recent studies³ indicate that the responses may be inconsistent. This change may be a function of recent attempts to encourage integration and raise the status of blacks. Little research has been done in this area in South Africa where infrequent cross-racial contact occurs between children owing to apartheid and hence preference for one's own racial group may be expected. Since blacks, however, in South Africa are accorded low status, it is possible that they prefer themselves significantly less often than whites prefer whites.

Twenty black and 20 white children (with equal numbers of boys and girls) aged 4.5 to 5.5 years were tested by an *E* of their own race to avoid possible *S-E* racial interactions. Two tasks assessed racial preference.

* Received in the Editorial Office, Provincetown, Massachusetts, on December 16, 1977. Copyright, 1979, by The Journal Press.

¹ Reprints are available from the third author at the address shown at the end of this article.

² Goodman, M. *Race Awareness in Young Children*. Cambridge, Mass.: Addison-Wesley, 1952.; Porter, J. *Black Child, White Child: The Development of Racial Attitudes*. Cambridge, Mass.: Harvard Univ. Press, 1971.

³ Fox, D., & Jordan, V. B. Racial preference and identification of black, American Chinese, and white children. *Genet. Psychol. Monog.*, 1973, 88, 229-286.; Winnick, R. H., & Taylor, J. A. Racial preference—36 years later. *J. Soc. Psychol.*, 1977, 102, 157-158.

First, Katz and Zalk's racial preference questionnaire⁴ for children was administered. In addition to the total score, racial liking and racial identification indices were obtained. Secondly, a behavioral task was employed in which the children had the option of donating a sweet to a photograph of a black or a white child. This also served as a validity check for the questionnaire data.

A 2 (race) \times 2 (sex) ANOVA was used to analyze the questionnaire scores. Significant race main effects for the racial liking ($F = 16.95$, $df = 1/36$; $p < .001$), racial identification ($F = 25.58$; $df = 1/36$; $p < .001$), and global preference ($F = 28.97$; $df = 1/36$; $p < .001$) indices emerged. In all instances, white children preferred themselves more frequently than their black counterparts preferred themselves. No significant interaction or sex main effects emerged. The two race groups also differed regarding sweet donations ($\chi^2 = 10.8$; $df = 1$; $p < .001$). Five percent of the whites donated their sweets to blacks, and 50% of the black children gave theirs to whites. This behavioral task correlated significantly with racial identification ($r = .60$; $df = 39$; $p < .001$), racial liking ($r = .62$; $df = 39$; $p < .001$), and overall preference scores ($r = .62$; $df = 39$; $p < .001$). Some validity can therefore be ascribed to the questionnaire data.

These results clearly showed racial preferences among preschool children in South Africa, which may reflect the white groups' relatively privileged position. White children rarely see their black counterparts and perceive black adults typically in low status roles. The present results may also reflect the greater ethnocentrism of South African white children, who have been shown to be significantly more ethnocentric than, for example, Indian children.⁵ That no sex differences in racial preferences were manifested is consistent with previous research.

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⁴ Katz, P. A., & Zalk, S. R. Doll preferences: An index of racial attitudes? *J. Educ. Psychol.*, 1974, **66**, 663-668.

⁵ Barling, J. I., & Fincham, F. D. Cultural and sexual effects on psychological conservatism in children. *J. Soc. Psychol.*, 1979, **107**, 15-21.

PERSONALITY PATTERNS IN BRITISH AND SOUTH AFRICAN MANAGERS*¹

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Recent theory and research has shown that there are national differences in extraversion and neuroticism.² The evidence is compelling. However, apart from a small number of studies conducted in England³ and America,⁴ very little cross-cultural research into the personality patterns of functionally differentiated managerial groups has been carried out. Accordingly, the present study compared the personality characteristics—as measured by the EPI (Form A)—of functionally differentiated groups of white South African managers with data obtained by Eysenck from comparable groups of businessmen in England.

Maslow has described certain sociopolitical prerequisites for basic need satisfaction and psychological health: "such conditions as freedom to speak, . . . freedom to investigate and seek for information, . . . justice, fairness . . ."⁵ etc. In South Africa many of these prerequisites are either totally absent or severely limited. It was hypothesized, therefore, that in those managerial functions which require greater interpersonal contact (such as Sales and Personnel), South African managers would be significantly more neurotic than their counterparts in England as a result of the restrictions imposed on contact between racial groups in South Africa, and the generally repressive atmosphere of the society as a whole.

Ss were 170 middle managers drawn from 13 small to medium (60 to

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¹ This study was conducted in 1972 while the writer was a graduate student in the University of Natal, Durban.

² Iwawaki, S., Eysenck, S. B. G., & Eysenck, H. J. Differences in personality between Japanese and English. *J. Soc. Psychol.*, 1977, 102, 27-33; Lynn, R. Personality and National Character. New York: Pergamon Press, 1971; Lynn, R., & Hampson, S. L. National differences in extraversion and neuroticism. *Brit. J. Soc. & Clin. Psychol.*, 1975, 14, 223-240.

³ Eysenck, H. J. Personality patterns in various groups of businessmen. *J. Occup. Psychol.*, 1967, 41, 249-250; Lynn, R. Personality characteristics of a group of entrepreneurs. *J. Occup. Psychol.*, 1969, 43, 151-152; Henney, A. S. Personality characteristics of a group of industrial managers. *J. Occup. Psychol.*, 1975, 48, 65-67.

⁴ Cattell, R. B. Handbook for the 16PF. Champaign, Ill.: Inst. for Personality & Ability Testing, 1970.

⁵ Maslow, A. H. Motivation and Personality. New York: Harper & Row, 1954. P. 92.

3,000 employees) sized organizations situated in Natal, the Cape Province, and the Transvaal. Ss were of English rather than Afrikaans descent, ages were evenly spread between 20 and 59 years; and most Ss had, at least, matriculated from high school. Five functional areas, identified by department name, were investigated: Sales, Personnel, Finance, Production, and Other.

As predicted, the results indicated that South African managers in Sales ($t = 1.96$, $df = 241$, $p < .05$; South African $\bar{x} = 8.14$, English $\bar{x} = 7.04$) and Personnel ($t = 2.5$, $df = 93$, $p < .05$; South African $\bar{x} = 10.57$, English $\bar{x} = 7.11$) were significantly more neurotic than English managers in those departments. In addition, South African sales managers were significantly more extraverted than English sales managers ($t = 2.67$, $df = 241$, $p < .01$, South African $\bar{x} = 12.80$, English $\bar{x} = 11.33$). There were no significant differences between countries in the other groups studied.

The results of this brief study offered some support for the views of Maslow and Cohen⁶ regarding the importance of sociopolitical factors in the determination of personality.

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⁶ Cohen, Y. A. *Social Structure and Personality*. New York: Holt, Rinehart & Winston, 1961.

REPLICATIONS AND REFINEMENTS

Under this heading summaries of studies which, in 500 words or less, provide useful data substantiating, not substantiating, or refining what we think we know; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfilm Publications

The Journal of Social Psychology, 1979, **107**, 129-130

THE EFFECTS OF ALCOHOL ON PSYCHOLOGICAL CONSERVATISM*

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JULIAN BARLING AND FRANK FINCHAM

Recent research on the effects of alcohol has consistently found that belief or cognitive expectancy, rather than the absolute alcohol content of the drink, mediates subsequent changes in aggressive¹ and sexual² behavior. Such research, together with experimental evidence showing that alcohol consumption results in a dose-dependent decrease in cognitive, perceptual, and physiological functioning,³ and with anecdotal reports of subsequent changes in behavior, tends to lead to the expectation that attitudinal changes will follow alcohol absorption. Since psychological conservatism is considered to be of some importance in psychological functioning,⁴ and is anecdotally believed to fluctuate after alcohol intake, the present study investigated the effects of alcohol on conservatism in male social drinkers.

Forty-eight male volunteer students (\bar{X} age = 19.7 years; $SD = 2.7$) participated in a pretest-posttest experimental design. During the pretest, Ss individually completed Wilson's Conservatism Scale⁴ under identical

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¹ Lang, A. R., Goeckner, D. J., Adesso, V. J., & Marlatt, G. A. Effects of alcohol on aggression in male social drinkers. *J. Abn. Psychol.*, 1975, **84**, 508-518.

² Wilson, G. T., & Lawson, D. M. Expectancies, alcohol and sexual arousal in male social drinkers. *J. Abn. Psychol.*, 1975, **85**, 587-594.

³ Franks, H. M., Hensley, V. R., Starmer, G. A., & Teo, R. K. The relationship between alcohol dosage and performance decrement in humans. *J. Stud. in Alcohol*, 1976, **37**, 284-297.

⁴ Wilson, G. D., Ed. *The Psychology of Conservatism*. London: Academic Press, 1973.

conditions. On the posttest, conducted five weeks later, Ss again completed the Conservatism scale while under random assignment to one of five groups: (a) Control Group ($n = 10$), with conditions identical to those of the pretest; (b) Simulated Alcohol Group ($n = 9$), controlling for possible demand characteristics.⁵ Ss were now told to behave as if they had consumed sufficient alcohol to have an effect on them without causing them inebriation; (c) Placebo Group ($n = 9$), Ss received a quantity of Sprite, a soft drink, in a polystyrene cup that had been smeared with whisky, to which three drops of whisky had been added to enhance the credibility of the placebo; (d) Alcohol Group 1 ($n = 10$), .4 gms./kg. body weight of ethyl alcohol mixed with 5.6 parts Sprite forming a 15% solution; and (e) Alcohol Group 2 ($n = 10$), .8 gms./kg. body weight of ethyl alcohol, also mixed to form a 15% solution with 5.6 parts Sprite. A double-blind procedure was used in administering drinks to the latter three groups, who all received the same instructions. A covariance analysis with pretest scores as covariates was used to analyze the data. No significant differences ($df = 4/43$; $p < .05$ in all instances) emerged on either the total Conservatism score or any of the Conservative subfactors: viz., anti-Hedonism, religion, militarism or ethnocentrism, indicating that the five groups did not significantly differ in terms of these criteria.

The present results are consistent with findings demonstrating only physiological or behavioral changes following alcohol consumption. Indeed, the single paper-and-pencil measure on which significant changes have been shown to occur (viz., Eysenck's Personality Inventory) assesses emotional arousal, and hence autonomic excitation may have mediated this change.¹ Nonetheless, the possibility that social or expectancy factors mediate changes in psychological Conservatism cannot be discounted on the basis of the present study, since Ss were individually tested in an experimental situation. Conceivably, social role or expectancy factors may only become salient when alcohol is consumed in the presence of other individuals.

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ATTRIBUTION OF FAULT TO A RAPE VICTIM AS A FUNCTION OF LOCUS OF CONTROL*

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KAREN PAULSEN

Jones and Aronson examined the hypothesis that a socially respectable rape victim would be seen as more at fault for the rape than a socially unrespectable victim.¹ They found more fault was attributed to a rape victim when she was described as married or a virgin than when she was described as divorced. They conceptualized their data in terms of the "just world" notion, wherein a person is seen as having something unpleasant happen to him for two reasons, either because he is an intrinsically bad person and is just getting what he deserved (fate) or, if he is intrinsically good, because he behaved in such a manner as to cause something bad to befall him (at fault).² They postulated that a divorcee is seen as intrinsically bad, while a virgin and a married woman are seen as intrinsically good and, thus, the greater attribution of fault to the latter. The present study attempted to replicate the above research, with the added variable of locus of control.³ It was hypothesized that Ss having an internal locus of control would attribute greater fault to a rape victim than Ss having an external locus of control.

Thirty-two undergraduate psychology students were administered Rotter's Internal-External Locus Scale (I-E), followed by two irrelevant questionnaires and, lastly, Jones and Aronson's rape report and questionnaire. The Ss randomly received one rape report in which the victim was listed as either married, divorced, or a virgin.

Ss were classified as to internality-externality on the I-E Scale by means of the median split. The median score for internals was 8.9 and for

* Received in the Editorial Office, Provincetown, Massachusetts, on September 9, 1977. Copyright, 1979, by The Journal Press.

¹ Jones, C., & Aronson, E. Attribution of fault to a rape victim as a function of respectability of the victim. *J. Personal. & Soc. Psychol.*, 1973, 26, 415-419.

² Lerner, M. J. Evaluation of performance as a function of performer's reward and attractiveness. *J. Personal. & Soc. Psychol.*, 1965, 1, 355-360; Lerner, M. J., & Simmons, C. H. Observers' reaction to the innocent victim: Compassion or rejection? *J. Personal. & Soc. Psychol.*, 1966, 4, 203-210.

³ Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychol. Monog.*, 1966, 80(1), Whole No. 609.

externals, 15.9. An unweighted means analysis of variance of the fault data yielded a significant main effect of I-E in the predicted direction ($F = 4.54$, $df = 1,26$, $p < .05$). Ss who scored low on I-E (internals) attributed greater fault to the rape victim, regardless of sexual status, than Ss who scored high on the I-E (externals). Analyses of the variables of sex of S, sexual status of the victim, and length of sentence assigned were nonsignificant, although internals tended to assign longer sentences than externals.

The present study failed to replicate the findings of Jones and Aronson that greater fault is attributed to more respectable rape victims. A significant effect was observed, however, in comparing Ss high and low in I-E. This suggests that a possible alternative explanation of Jones and Aronson's results may involve the intervening variable of locus of control.

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REPEATED EXPOSURE TO LIKED AND DISLIKED SOCIAL STIMULI*

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Research on the "mere exposure effect" has not yet clearly established whether repeated exposure to a word, picture, or person leads to increasingly favorable responses when the stimulus is initially disliked. One hypothesis, which has received some empirical support,¹ is that the enhancing effect of repetition occurs only for positive or neutral, but not negative, stimuli. In two studies,² however, the mere exposure effect occurred for disliked as well as liked stimuli. By combining the procedures used in the latter two studies, the present experiment tested the robustness of the effect with stimuli of differing initial favorability.

Under the guise of a "visual memory and impression formation study," each of 144 female college students was shown eight slides of male portraits from another college's yearbook. Amount of exposure was varied by presenting each *S* two of the slides for 20 four-second exposures, two for 10 such exposures, two for five exposures, and two slides only once—all in a random order. Finally, *Ss* rated each of the eight stimuli on four bipolar scales—likeableness, goodness, handsomeness, and honesty—which were combined into a composite favorability score.

Initial positivity of stimuli was varied in two ways within a 3×3 between-subjects design. For the first manipulation ("intrinsic"), three different sets of eight photographs were used, which had been prerated by 27 female *Ss* as either very unlikeable, neutral, or very likeable. For the second manipulation ("extrinsic"), the *E* described each set of stimulus persons as having either negative, neutral, or positive social characteristics.

Although there was a main effect of exposure frequency on composite favorability ratings, $F(3,405) = 10.45$, $p < .001$, this effect did not interact

* Received in the Editorial Office, Provincetown, Massachusetts, on September 29, 1977. Copyright, 1979, by The Journal Press.

¹ E.g., Grush, J. E. Attitude formation and the mere exposure phenomena: A non-artifactual explanation of empirical findings. *J. Personal. & Soc. Psychol.*, 1976, **33**, 281-290.

² Hamm, N. H., Baum, M. R., & Nikels, K. W. Effects of race and exposure on judgments of interpersonal favorability. *J. Exper. Soc. Psychol.*, 1975, **11**, 14-24. Zajonc, R. B., Markus, H., & Wilson, W. R. Exposure effects and associative learning. *J. Exper. Soc. Psychol.*, 1974, **10**, 248-263.

with the initial favorability of the stimuli. According to a trend analysis, the nine experimental groups produced positive, predominantly linear exposure-favorability functions, the slopes of which did not significantly differ. The two manipulations of initial favorability did have overall effects on the composite scores, $F_{\text{intrinsic}}(2,135) = 4.09, p < .05$; $F_{\text{extrinsic}}(2,135) = 7.75, p < .01$. In short, the initial favorability of the stimuli affected the intercepts, but not the positive slopes, of the mere exposure functions.

These results substantiate the conclusion that the mere exposure effect is not necessarily contingent on the initial favorability of the observed stimuli. There are at least two clear differences between the present experimental procedures and those used in the few studies that ostensibly support the opposite conclusion. Most of the other studies included associative learning effects either by explicitly pairing novel stimuli with a negative context or stimulus, or by exposing stimuli which already had well-learned negative associations. In one of these studies, *Ss* were potentially committed to their initial negative reactions via a pretest. Thus, it appears that the enhancing effect of mere exposure does occur for negative stimuli, except under certain specialized conditions.

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THE EFFECT OF MOOD INDUCEMENT UPON AUDIENCE RECEPTIVENESS*

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Is mood a determining factor of an S's receptiveness to a speaker's message? The present investigation, designed to answer this question, involved the manipulation of mood through the use of the mood induction procedure (MIP) developed by Velten.² This procedure consists of the presentation of a series of negative, neutral, or positive mood statements which Ss read and attempt to experience. A sample positive statement is "If your attitude is good, then things are good, and my attitude is good." That this procedure is able to elicit a mood corresponding to the nature of the statements has been shown in numerous investigations.³ Because this mood manipulation technique has been previously validated, the present study is a refinement of previous investigations of the relationship between mood and audience receptiveness.⁴

To assess whether mood elevation is accompanied by increased receptiveness to a speaker's message, positive mood statements were presented to one group of Ss and neutral mood statements to the other. Ss having read positive mood statements were expected to indicate greater agreement with the speaker's position on a topic of current interest (motorcycle helmet laws) than Ss having read neutral statements.

Eighty undergraduate females filled out a five item pretest questionnaire on current issues. Answers were on a 1 to 5 continuum with 1 being strongly agree and 5, strongly disagree. A statement reading "I believe that motorcycle helmets should be worn by all cyclists" was included. Only the

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¹ Requests for reprints should be sent to Virginia Brabender, Department of Psychology, St. Lawrence University, Canton, New York 13617.

² For example, see M. Natal. Effects of induced elation-depression on speech in the initial interview. *J. Counsel. & Clin. Psychol.*, 1971, 43, 45-52.

³ Velten, E. A laboratory task for induction of mood states. *Behav. Res. & Ther.*, 1968, 6, 473-482.

⁴ For example, see M. Galizio & C. Hendrick. Effects of musical accompaniment on attitude: The guitar as a prop for persuasion. *J. Appl. Soc. Psychol.*, 1972, 2, 350-359.

56 Ss who responded "strongly agree" participated in the remainder of the experiment.

After 10 to 12 days, Ss were randomly assigned to four treatment conditions consisting of the presentation of (a) good mood statements followed by a tape advocating helmet laws; (b) good mood statements followed by a tape opposing helmet laws; (c) neutral statements followed by a prohelmet law tape and (d) neutral statements followed by the antihelmet law tape. They were then asked to complete a posttest questionnaire which included the item, "I believe that present motorcycle helmet laws should be enforced."

If mood elevation increases receptivity to messages, the introduction of an antilaw tape should produce less agreement with the posttest questionnaire helmet statement when Ss read positive rather than neutral mood statements. A chi square analysis [$\chi^2(4) = 14.00, p < .005$] confirmed this prediction. A second indication of the importance of mood was a comparison of the prolaw tape *vs.* the antilaw tape conditions. When Ss read neutral statements, the posttest responses for these two conditions failed to differ significantly from the pretest responses. When Ss read positive mood statements, Ss who heard the antilaw tape registered less agreement with the posttest statements than Ss who heard the prolaw tape [$\chi^2(4) = 9.72, p < .005$]. These results thus show that the presence of a good mood enhances a listener's receptiveness to a speaker's message.

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A COMPARISON OF ALTERNATIVE MEASURES OF GROUP CONFORMITY INFLUENCE ON CONSUMER BEHAVIOR*

The University of Texas at Austin

JOHN H. MURPHY AND WILLIAM H. CUNNINGHAM

Measurement problems of considerable magnitude are encountered in attempting to study the impact of group conformity influence on the behavior of individual group members. Perhaps the most basic measurement problem centers on the need for an operational measure of group influence that realistically assesses the behavior under study.

In developing such a measure several researchers¹ have proposed and applied (a) a simple approach based on the number of different alternatives selected by members of a group; (b) a measure based on the multinomial probability distribution; and (c) a measure based on the hypergeometric probability distribution. A comparison of the latter two measures on a conceptual and empirical basis produced equivocal results.

The present study focused on an empirical comparison of all three previously suggested procedures in order to assess their relative validity and sensitivity. Data were gathered from 35 existing friendship groups, and multiple regression analyses were used to examine relationships between conformity influence (the dependent variable) and aspects of group structure, group processes, and the social character of the group. Separate regressions were conducted for each of the three conformity influence measures in 10 different consumer situations (for example, specific brand choice).

The analyses produced the following average adjusted R^2 value for each of the measures across the 10 contexts: multinomial = .16, proportional = .13, and hypergeometric = .11. Two of the regressions were statistically significant ($\alpha = .05$) with the use of both the multinomial and the proportional measures. The regressions using the hypergeometric measure were significant in only one context.

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¹ For sources on three measures, see J. H. Murphy & R. E. Witt. Group conformity influence: A proposed measure. *J. Soc. Psychol.*, 1975, 97, 115-121

Examination of the pattern of dominant predictor variables in each of the sets of analyses revealed no discernible explanatory pattern in the proportional and hypergeometric analyses. The variable "group knowledge" emerged in half of the analyses based on the multinomial measure. Correlation coefficients between pairs of the measures across the 10 contexts revealed the following averages: proportional/multinomial = .26, proportional/hypergeometric = .89, and multinomial/hypergeometric = .13.

The weak R^2 values obtained in the majority of the contexts examined is interpreted as *not* being supportive of the validity of any of the measures. Further, the findings with respect to the pattern of dominant predictor variables and the intercorrelations among the measures provides little clear direction.

Thus, an empirical examination of the relative validity of the three measures produced equivocal results. Although the weak R^2 s could have resulted from any one or a combination of several factors, the results may only be interpreted as failing to support the construct validity of any of the measures. The investigation serves to underscore the need for additional work in the measurement area if methodologically and conceptually sound progress is to be made in expanding knowledge on the impact of groups on individual behavior.

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MORAL JUDGMENT AND PSYCHOLOGICAL CONSERVATISM*

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Because of the relationship between Hogan's Survey of Ethical Attitudes¹ and the California F Scale, a measure of antidemocratic tendencies and conservatism, Lorr and Zea² investigated whether moral judgment can be interpreted in terms of a liberal-conservative dimension. As Hogan's scale correlated significantly with their conservative-liberal factor, they argued that the two factors are equivalent. However, whether moral judgment merely represents a liberal-conservative dimension is questionable, as Survey scores also correlated with a dogmatism factor. To avoid this difficulty, the present study used an alternate measure based on a cognitive developmental stage,³ rather than character, model. Moreover, Wilson's Conservatism Scale⁴ was considered more appropriate as it (a) does not confound conservatism and dogmatism, (b) is free of social desirability factors,⁵ and (c) is applicable within the South African context.⁶ Since the typical conservative has been described as conventional, conforming, punitive, authoritarian, and antihedonistic,⁷ it was hypothesized that conservatism would be positively correlated with conventional and negatively related to principled moral reasoning.

Fifty-five males (\bar{X} age = 19.7 years; $SD = 2.7$) completed Rest's

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¹ Hogan, R. A dimension of moral judgment. *J. Consult. & Clin. Psychol.*, 1970, 35, 205-212.

² Lorr, M., & Zea, R. L. Moral judgment and liberal-conservative attitudes. *Psychol. Rep.*, 1977, 40, 627-629.

³ Kohlberg, L. Moral stages and moralization: The cognitive developmental approach. In T. Lickona (Ed.), *Moral Development and Behavior*. New York: Holt, Rinehart & Winston, 1976.

⁴ Wilson, G. D., Ed. *The Psychology of Conservatism*. London: Academic Press, 1973.

⁵ Orpen, C. The relative susceptibility of catch-phrase and propositional scales to social desirability. *Psychol. Rep.*, 1971, 29, 487-495.

⁶ Wilson, G. D., & Shutte, P. The structure of social attitudes in South Africa. *J. Soc. Psychol.*, 1973, 90, 323-324.

⁷ Wilson, G. D., Ausman, J., & Mathews, T. R. Conservatism and art preferences. *J. Personal. & Soc. Psychol.*, 1973, 25, 286-288.

Defining Issues Test⁸ and Wilson's scale. As moral stage typing (the only reported index of lower stage scores) is based on normative data which vary with geographical location,⁹ the former was scored to yield both the standard principled index and a similarly computed conventional score. A total Conservatism score was derived from Wilson's scale. Pearson correlations indicated that principled morality correlated significantly with conservatism ($r = -.22$; $df = 54$; $p < .05$); the relationship between conventional morality and conservatism approached significance ($r = .18$; $df = 54$, $p < .09$).

The results partially support the present hypothesis despite possible cross-cultural differences which were probably minimized by the use of white English-speaking university students. The relationship found may be explained in terms of cognitive variables. Wilson *et al.* found that cognitive complexity underlies psychological conservatism, while Kohlberg maintained that higher stages of moral judgment reflect increasing cognitive complexity. Furthermore, Hogan's Ethics of Social Responsibility and Personal Conscience can be seen as similar to conventional and principled morality, respectively, and it is perhaps not surprising that the present results are consistent with those of Lorr and Zea. However, no support was found for equating moral judgment and psychological conservatism as they shared only a minimal amount of variance.

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⁸ Rest, J. Manual for the Defining Issues Test. Minneapolis: Univ. Minnesota, September, 1974.

⁹ Rest, J. Moral judgment related to sample characteristics. Final Report to the National Institute of Mental Health, Washington, D.C., August, 1976.

CURRENT PROBLEMS AND RESOLUTIONS

Under this heading appear summaries of data which, in 500 words or less, would increase our comprehension of socially compelling problems, hopefully move us somewhat closer to a solution, and clearly show promise of transcending their own origin in the Zeitgeist, additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, 107, 141-142

ON REQUESTING REPRINTS*

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This note investigates the most effective ways of securing reprints. One hundred and sixty-eight articles were selected from issues of *Current Contents* (1975) in areas including community power, psychiatric epidemiology, population studies, college course and faculty evaluation, social science methodology, and Piagetian studies.

Each article was systematically assigned to one of eight request conditions: typed—letter, xerox form, ditto form, postcard form; handwritten—letter, xerox form, ditto form, postcard form. Letters were sent on department letterhead. Xerox forms were produced from letterhead with the constant parts typed in. Ditto forms resembled xerox forms except all parts were typed. The content of all forms was virtually identical. All requests asked for reprints and related material.

Requests were mailed to first authors September 30, 1975. As reprints were received, the quality of response was recorded. It was determined (a) whether a reprint was received, (b) the number of days elapsed, (c) whether related material was received.

Of 168 requests mailed, correct reprints were received for about two

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thirds (106/168). Reprints were received as soon as three days after mailing and as late as 102 days (median = 17 days). It took 36 days for one half the requested material to arrive. Xerox letterhead forms obtained the best response rate (70%), followed by letters (65%), ditto forms (62%), and postcard forms (57%). Whether the request was typed or handwritten made little difference except for postcards. Typed postcards received the highest return rate (80%); handwritten postcards received the lowest (38%). A review of handwritten postcard requests indicated nothing unusual to account for their poor performance.

Typed xerox requests were received, on average, substantially later than those of any other method (37 days compared to the overall mean of 23 days). Related material was most often received from letters (36%) followed by xerox forms (17%), ditto forms (10%), and postcards (8%).

Psychology journal reprints were most often received (73%) followed by psychiatric or related journal reprints (72%) and then those from miscellaneous journals (54%). Sociology journal reprints were least often received (53%). The time elapsed until receiving reprints did not substantially differ between journal categories. Sociologists (25%) were most likely to send related materials (to author, a sociologist).

Authors' geographical residence was dichotomized into U.S. and foreign. U.S. authors invariably gave higher quality responses. They returned a greater percent of requests (65% compared to 52%); the response was faster (22 days, on average, compared to 47 days); they sent more related material (14% compared to 12%); and they were more likely to send correspondence indicating they were out of reprints.

This study suggests requesting reprints will produce good results for recently published material. Nevertheless, the data caution against sending requests without keeping records. Furthermore, they indicate it will take over a month for half the requests to be filled.

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JUROR USAGE: A MODERATOR OF PERCEPTIONS OF JURY SERVICE¹

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Most research concerning judicial administration has focused upon efficient juror management and utilization and not upon beliefs or perceptions towards jury service. Understanding what influences beliefs towards service is necessary so that court management can reduce both negative feelings toward the judicial system and "excuse" oriented behavior caused by those feelings.

The purpose of this study was to test the impact that actually being seated as a juror as opposed to sitting "around the courthouse" would have on changing beliefs of jury service. It was hypothesized that beliefs or perceptions towards jury service would change more and in a positive direction for those who were seated as opposed to those not seated as jurors.

Ss were 166 randomly selected registered voters recruited for jury service in the state capital of Alabama across two separate and complete weeks. Thirty Ss were deleted from the ensuing analysis because of either incomplete questionnaires or illiteracy on the part of the S. Each juror provided responses concerning their perception or beliefs about jury service both on the first day and the last day of service. No significant differences ($p < .05$) were found between the two separate samples of jurors in terms of beliefs or demographic characteristics so that the Ss were pooled for the purposes of this study.

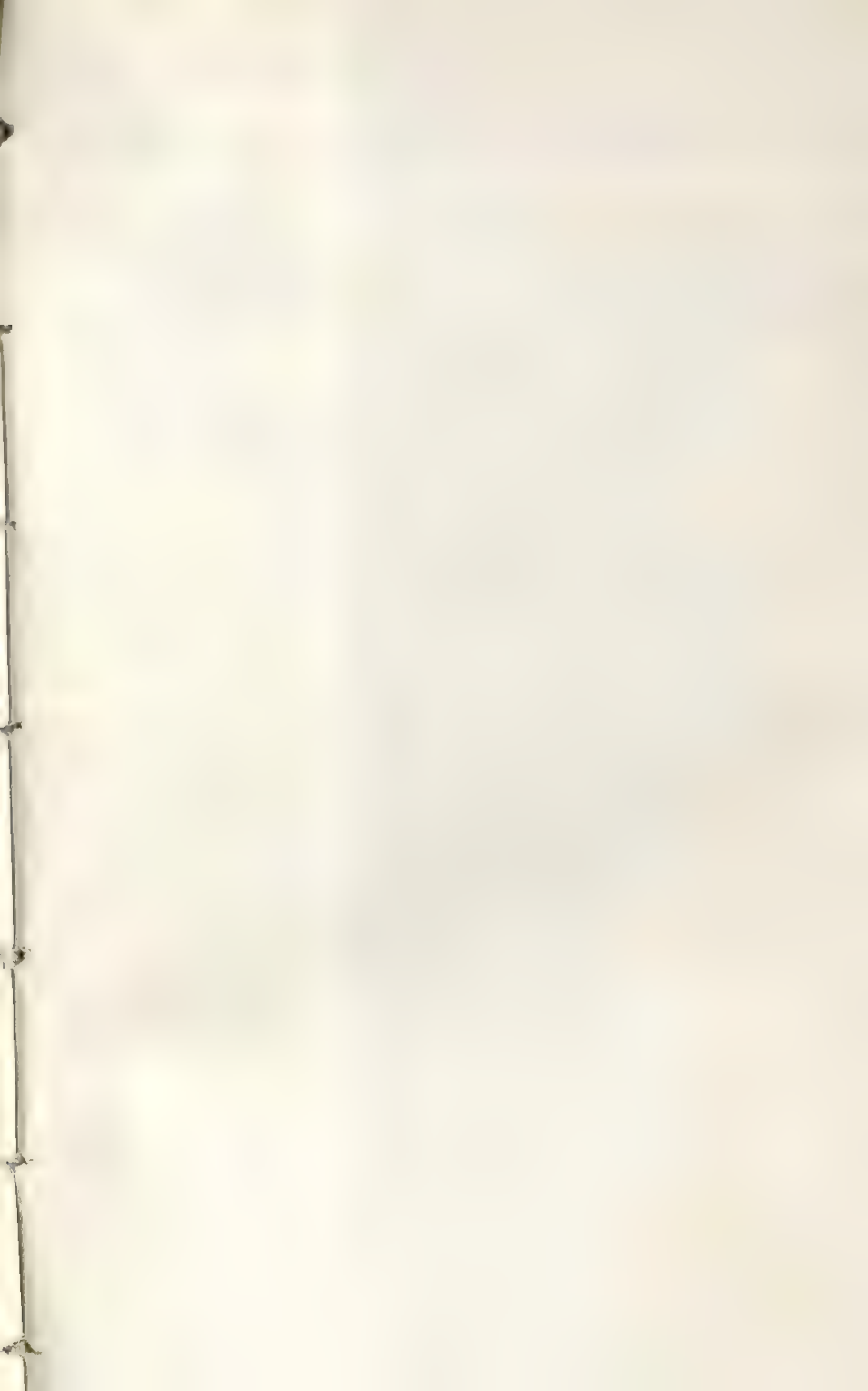
Beliefs were operationally measured as seven-place bipolar scales ranging from "likely" (+3) to "unlikely" (-3) similar to those frequently used in attitude research.² The six beliefs about jury service examined in this study were (a) service to community, (b) financial compensation, (c) treatment by

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¹ Financial support for this study was provided by the Permanent Study Commission on the Judicial System of the State of Alabama. Reprints are available from the first author at the address shown at the end of this article.

² Fishbein, M., & Ajzen, I. *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, Mass.: Addison-Wesley, 1975.

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American	<i>Amer</i>	Mathematical	<i>Math</i>
Anatomy	<i>Anat</i>	Measurement	<i>Meas</i>
Animal	<i>Anim</i>	Medical	<i>Med</i>
Applied	<i>Appl</i>	Mental	<i>Ment</i>
Archives	<i>Arch</i>	Monographs	<i>Monog</i>
Association	<i>Assoc</i>	Neurology	<i>Neuro</i>
Attitude	<i>Attit</i>	Opinion	<i>Opin</i>
Australian	<i>Aust.</i>	Orthopsychiatry	<i>Orthopsychiat</i>
Behavior	<i>Behav</i>	Personality	<i>Personal</i>
British	<i>Brit</i>	Personnel	<i>Person</i>
Bulletin	<i>Bull</i>	Philosophy	<i>Philos</i>
Bureau	<i>Bur.</i>	Physics	<i>Phys.</i>
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Children	<i>Child</i>	Psychiatry	<i>Psychiat</i>
Chinese	<i>Chin</i>	Psychoanalysis	<i>Psychoanal.</i>
Clinical	<i>Clin.</i>	Psychology	<i>Psychol</i>
College	<i>Coll.</i>	Psychosomatic	<i>Psychosomat</i>
Comparative	<i>Comp.</i>	Quarterly	<i>Quart</i>
Consulting	<i>Consult.</i>	Religious	<i>Relig</i>
Contributions	<i>Contrib.</i>	Research	<i>Res.</i>
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SOCIOECONOMIC RIVALRY AND NATIONAL COMPETENCE IN IVORY COAST¹

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SUMMARY

Ivory Coast, a highly multilingual nation, continues to use French as the exclusive national language. Since French is seen as the key to economic advancement, and access to French has varied ethnically, Ivorians were expected to display sensitivity to variation in French competence, as people have shown toward linguistic variation in Canada and the United States. A modified matched guise technique, adapted to local circumstances, tested three groups of adult men (10 each): no formal education, primary school, and tenth grade. Comparison of the identity of the guises and the judgments of the respondents implied that achievement judgments were made first; ethnic labels were assigned later according to ethnic stereotypes, rather than the reverse. The study showed the emergence of positive norms, but not negative ones, in contrast to the Canadian and U.S. experiments, where social prejudices resulted in strong negative judgments as well. The results emphasize the importance of economic factors in overcoming potentially disruptive ethnolinguistic divisions.

A. INTRODUCTION

There has been growing interest in recent years in national multilingualism and associated political tensions, as in the cases of Canada and Belgium. There are, of course, other examples of national multilingualism without tensions, such as Switzerland. Inglehart and Woodward (2) at-

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tempted to explain these contrasting cases by degrees of economic development. They noted that multilingual nations with either well-developed economies or with very little development had little problem with language conflicts. Nations with moderately developed and changing economies frequently have language tensions because of economic competition between linguistic groups. Widespread use of a world language, however, was seen as a mitigating factor in these cases.

Ivory Coast, a West African nation which gained its independence from France in 1960, is highly multilingual with some 60 ethnolinguistic groups. There is no dominant African lingua franca, though Dioula with its history as a trade language and Baoulé as the language of the largest ethnic group are frequently spoken as second languages (6). The rapid expansion of the economy allows for a high degree of economic mobility, at least for some persons. Ivory Coast had a real growth rate of around 14% between 1960 and 1970 compared to average African and Third World Industrial growth rates of 6.5-7% in the same period (7). Stryker comments, "One of the most tangible indicators that the official statistics are not a mere facade and do point to real economic dynamism and social transformation is the significant and continuing immigration of foreign Africans, Europeans, and others into the Ivory Coast" (7). With such economic activity, one would expect tensions between language groups according to Inglehart and Woodward's analysis. And while they have suggested that the widespread use of a world language can exert a neutralizing effect on tensions, the role of French in Ivory Coast is ambiguous. As the only official language, it unifies those who have been through the educational system. However, access to education, while improving, has been uneven in the past, with certain geographic regions and their populations being more favored than others. This has meant that unequal access to French roughly duplicates ethnolinguistic divisions and could thus accentuate intergroup tensions rather than ease them.

B. METHOD

1. *Data Collection*

In June and July, 1976, three instruments were used in interviewing Ivorians concerning language-related issues. The interviews were conducted individually by Ivorian university students. Because some of the respondents were not literate, all interviews were conducted orally, with the interviewer noting responses on a questionnaire. The first instrument was a series of background questions about the respondent. The second

was a matched guise test that elicits indirect identification of stereotypes by asking the respondent to rate speakers on socioeconomic and personal value scales. The speakers represent different linguistic groups but are not identified for the respondent. The respondent, nevertheless, tends to rate speakers according to his or her feelings toward the speaker's group. This method of identifying underlying prejudices has already been used successfully in Canada, the United States, and elsewhere. For the matched guise test in the present study, 12 speakers were selected as guises. They came from two different sectors of the economy, business and medicine, and represented the same three educational levels as the respondents: no formal education, primary school, and tenth grade. They were all living in the capital, Abidjan, located in the southern region of the country. The guises were similar to the respondents in age, sex, and ethnic groups. In other matched guise tests, speakers have read written texts to maintain similar content in the speech samples. Reading was not possible in the Abidjan test, as one group of the speakers was not literate. Instead, each speaker described a set of action photos from a local soccer match. The matched guise tapes were then prepared by excerpting 30-45 seconds of continuous description for each speaker. Two tapes were prepared with the same excerpts, but in different sequences and preceded by two practice excerpts. The order of speakers was also mixed for educational level, economic sector, and ethnic group. The style of speech can be considered as formal or "best" relative to the repertoire of each speaker as judged both from the speakers' manners during the recording sessions and from the circumstances. The respondents were asked to rate each of the 12 speakers on seven 4-point scales: level of job and education (3 questions), personality (3 questions), intelligence (1 question), and 3 times with 4-way choices: sector (1 question), and ethnic group (2 questions). They also responded to one open-ended ethnic identity question (3, 5, 8).

The third instrument was an attitude survey which solicited direct opinions about language use in the country. The questionnaire contained 28 questions concerning eight topics: the evaluation of others on the basis of their French-speaking competence, local *versus* foreign accents in French, broadcasting French, the French of educators, the level of French needed to advance, self-evaluation of oral French competence, self-aspirations, and preferences in the use of French and African languages. All but four of the questions were scaled items. One question asked for a preference between two items only (radio and television speakers), and a set of three questions were open-ended, asking for situations in which African languages were preferred to French.

All three of the instruments sought to gather information on the perception of and social reaction to the different varieties of spoken French current in Ivory Coast. There is a great range of variety in Ivorian French. People with a high school diploma or university education may speak a variety very close to, if not identical with, standard European French. On the other end of the scale are those who have learned a minimal use of French from friends or co-workers and who are understood only with difficulty by non-Ivorians (4, 9). Since economic mobility is linked to skill in French and the opportunity to acquire that skill has varied between ethnolinguistic groups, intergroup tensions could be expected to be associated with French usage, if indeed interethnic tensions did exist.

2. *Population*

Three groups were examined with 10 individuals in each: the first had no formal schooling, the second had completed primary school, and the third had completed tenth grade. These last two levels are major points at which students leave the school system to work. Education was selected as the primary factor for establishing the three groups, because it is the major source of French for Ivorians.

The sex of the respondents was held constant, all males, since time available did not permit doubling the sample size to include both sexes. Males were also selected because the interviewers available were male, and cross-sex interviews could have influenced the results. All the men were residents of Abidjan, as were the matched-guise speakers. Several neighborhoods of the city were represented, from popular to middle-class. The sample represented the typical urban population fairly well in that about half had arrived in the city within the last five years, 63% were under 30 years old, and most claimed membership in a world religion, either Catholicism or Islam. Their religious identification, in that it was unlike the percentages usually given for the country, probably demonstrated an eagerness to appear "modern," as identification as animist would not be. This apparent eagerness to appear "modern" may also indicate the sample population's sensitivity to status markers and thus the likelihood of their responding to any language-based status markers as well. The ethnic distributions were also typical of the urban south with the Akan making up a third of the sample and the remainder being Krou, Gur (Voltaic), Northern Mande, Southern Mande, and one Hausa, in descending order of size. The distribution of nationalities closely paralleled the national statistics with 83% Ivorian, 13.3% from Upper Volta, and one person from another

African country (1). The government's position as the major employer in the country is made evident in the sample. Seventy percent were employed by the government at various levels and 30% in the field of small business, either as employee or self-employed. There appeared to be a problem of underemployment with the individuals of the primary school level in the sample. Seventy percent of them were employed in jobs requiring no literacy. Many persons seemed concerned with bettering their positions: 43% had taken some special courses outside the regular school system, either adult evening courses in general education or commercial and technical courses.

C. RESULTS

1. *Overt Opinions*

On the attitude survey, p -values of .05 or less on a chi-square test (with Yates' correction) were considered as clear choices between options. A difference of approximately 75% to 25% was usually needed with the size of the sample to produce a p -value no higher than .05. Greater values were considered as mixed or ambiguous responses. Thus, in the following descriptions, respondents as groups are reported as being "unsure" when the p -value was greater than .05. Other statistical tests, such as factor analysis and analysis of variance, though more sensitive tests, were rejected because of the small sample size.

The respondents' self-evaluations of their French speech corresponded with their actual educational level. They appeared, then, to feel that French-speaking ability was closely tied to educational level and also appeared to have no particular inhibitions about it, as would have been shown if they had under- or overrated themselves. They expressed general satisfaction with their jobs (80%), but at the same time were eager for self-improvement, both in French and in specific skills (each 87%, $p = .01$). Respondents were unsure about the level of education needed to speak French well. Primary school, however, was judged to be insufficient to get a good job (80%, $p = .02$).

The respondents were definitely in favor of having their children speak the African family language at home (77%). The less educated respondents reported listening to radio broadcasts in local languages frequently (90% and 100%), but the tenth-grade level respondents were divided on this (50%). Otherwise, the respondents were generally indefinite about preferring to use African languages. When they cited preferred situations, though, the most common were the village, home with family and friends,

and with considerably less frequency, at the market. The salient domain division between French and African languages, then, appears to be home *versus* public, since the concept of "home" usually extends to the village and to a lesser extent the whole ethnic group in Africa. The only exception to this division was the market, which is one public meeting place where many participants, notably vendors of foodstuffs, have not acquired any ability in French, so that the choice is eliminated. There is frequently the same lack of choice in the village, but since the African language was preferred in the home even when there was a choice of French, the home-village domain is more meaningful than simply a lack of options.

While the respondents appeared able to judge their own level of French readily and accurately, they were not always so assured in assessing others. Only respondents from the Akan and Krou ethnic groups felt they could tell the field and level of employment of someone else by how that person spoke French. Most felt they could tell from French speech if someone was Ivorian or not (83%, $p = .01$), and also whether or not someone was French (93%, $p = .001$). Opinion was divided on the desirability of speaking French with a French accent, but was generally positive toward having an Ivorian accent in French (77%), most strongly so in the lower educational levels (50% in highest, 100% middle, 80% lowest) and the Northern ethnic groups. Since, in the past, general public opinion has usually deprecated any deviations from standard European French, the indication of a positive attitude toward "Ivorian French" suggests a change in attitude on the part of Ivorians. They seem to be viewing themselves more positively and growing in assertiveness with regard to national identity. The student assistants also felt this was an accurate assessment both for themselves personally and for the people they had been interviewing.

The lower level primary school teachers (*moniteurs*) received mixed ratings on French ability, though the Northerners viewed them positively (86%). The upper level primary school teachers (*instituteurs*) were rated positively by all groups (90%, $p = .01$). The "*instituteurs*" have at least a tenth-grade level, while the "*moniteurs*" may only have a primary school certificate, which gives an indication of the respondents' views about how much education is needed to speak French well, even though their answers were unclear when asked this directly. The other area of public speaking investigated was broadcasting. The respondents gave positive ratings to the French of newscasters (80%, $p = .02$), but their ratings of sportscasters depended on the respondent's own level of education, with the highest level moderately negative (80%) and the middle and lowest levels positive (80% and 90%, $p = .001$).

2. *Subjective Reactions*

The responses of the listeners to the matched guise tapes were analyzed by cross tabulations with factors from the social background of the listeners. Cross tabulations were also used to determine correlations between responses to different questions in the matched guise test. Statistical procedures similar to those for the previous questionnaire were used. Opinions are reported as ambiguous or unsure if the group's score did not have a significant p -value. Again, a split of approximately 75% to 25% was needed for a p -value of less than .05. The reactions of the respondents to two excerpts of one speaker, a practice case and one of the actual test cases, were almost identical, providing some indication of reliability in the respondents' judgments. A control for possible influence by the order of the questions and speakers or by the different interviewers showed that of the 264 individual questions posed (11 questions by 12 speakers by 2 factors, order and interviewer), 13 or 5% were affected: 4 by order and 9 by interviewer. The effect was largely to raise the positive score, and these questions were removed from the comparisons. In the case of Speaker D, this meant that the education rating had to be omitted. In the other cases, the rating was not based on all three questions making up the rating. Most of the questions affected were on the educational level of the speaker, a judgment which most respondents in the attitude survey felt they could not make accurately. The susceptibility to influence may reflect this uncertainty. The other questions so influenced were personality questions. None of the questions on intelligence, sector of employment, or ethnic group was affected.

Where respondents as a group were able to make clear judgments, there were no errors in assessing the level of education of the speakers. The speaker with a tenth-grade education was rated high (he was so rated by 93% of the speakers, $p = .001$), those with no schooling were rated low (two cases: 77%, $p = .05$, and 80%, $p = .02$). Some primary school speakers however, received a high rating by some subgroups of respondents. In addition, listeners with no schooling tended to rate others high, and those having a tenth-grade level tended to rate others low where there was a significant difference between groups of respondents. For example, a primary school speaker was rated high by 80% of the respondents with no schooling and low by 90% of the tenth-grade respondents ($p = .01$). In the case of a speaker with no schooling, 100% of the tenth-grade respondents and 90% of the primary schoolers rated him low, while the respondents with no schooling were divided ($p = .02$). Similarly, Akans and Krous

tended to rate others low. One hundred percent of the Akans rated a speaker with no schooling as low, but the Northerners rated him as high ($\phi = .02$). A high intelligence rating could be predicted by a high educational rating, but there was no correspondence between low intelligence ratings and low educational ratings, except for one case by an educational subgroup. A high personality rating would also be predicted by a high educational rating, but high personality ratings also occurred elsewhere. Respondents gave consistent ratings as a whole group or as subgroups on only half or less of the speakers on any of the factors. While there were some group-wide norms being expressed with regard to French speech, there seemed to be a large gray area of speech which might be rated in either direction yet.

Judgments about the sector of employment of a speaker was made only once by the listeners and this was by subgroups, not by the entire group. The tenth-grade respondents thought that Speaker L was in the military, and those with no schooling thought he worked in an office. Though isolated, this result is interesting in that Speaker L was the only one to receive low ratings in both education and intelligence, indicating low regard for his French. In the past, a number of Ivorians who had no contact with the school system learned a kind of "broken" French during service in the colonial army. Another source of contact French was by being a "planton" or office helper in the colonial offices. Indeed, today a number of plantons in administrative offices are veterans. L's speech, then, appeared to fit a stereotype in many respondents' minds.

When judgments were made across a group of listeners on the geographic-ethnic factors, they were consistent for the most part. Six cases were completely consistent, one was inconsistent, and one case was consistent in part. Accuracy was a different matter. In comparing the listeners' judgments with the identity of the speakers, only 13 of the 21 judgments made by the whole group or by subgroups were accurate. Five of these 13 had inaccurate alternate responses in another subgroup. Judgments were made about all the speakers, though, accurate or not, so that the listeners seemed more ready, and more consistent as a group, about making ethnic judgments than they did about education or personality. This implies that certain regional-ethnic stereotypes related to French ability do exist, and that they are not particularly accurate.

A comparison was made between the judgments on personality and level of education according to whether the listener identified the speaker (accurately or not) as being of the same ethnic group as himself or not. No

significant difference was found, so that this factor did not influence the results. However, the number of same identifications was very small, so this result should not be extended beyond the present sample.

In comparing the results of the different matched guise variables, a high judgment on level of education predicted high judgments in intelligence and in personality, but low level of education had no predictive power, occurring with both high or low intelligence and personality. High intelligence, then, was seen as necessary to achieving a high level of education, and, at the same time, it seemed that a high level of education enhanced the personality. There was no correlation between level of education and place of origin. For ethnic groups, a speaker identified as a Gur, however, was never associated with high education. Interesting to note is the fact that although one of the tenth-grade speakers was a Gur, he was never identified as such; rather, he was identified as having a high level of education. Something similar occurred with two Northern Mande speakers. They were also rated high in either education or intelligence, but were never correctly identified by region or ethnic group. These cases imply that while the listeners held some negative ethnic stereotypes, they were willing to judge an individual on his own merits first, and then adjust the ethnic identity to fit their stereotypes. An ethnic identification of Baoulé correlated most frequently with a high educational rating. Educational ratings varied with Krou or Dioula identifications. The correlation between educational level and Gur or Baoulé (Akan) ethnic identities reflects the realities of the country. Most of the Gur speakers come into the country as unskilled labor and have had no formal education. The Baoulés have had far greater access to education historically because of their location in the South. There was no correlation between personality and ethnic ratings. Intelligence and ethnic ratings were similar to education: an identification of Baoulé corresponded to a high intelligence rating, no identification of Gur rated high, and other ethnic groups' ratings were mixed.

D. DISCUSSION

The data have shown that social norms related to the ability to speak French are very incomplete. Though respondents in the overt attitude survey felt that they could assess their own speech accurately for educational level (because they knew their actual level?) but not that of others, they in fact did, as a group, make accurate assessments of some of the speakers in the matched guise test. Their reluctance and inability to rate most of the speakers consistently demonstrated, nevertheless, the incom-

pleteness of the norms. The cause did not seem to be an inability to respond to the testing situation, because definite judgments were made in some cases. A plausible explanation would be that the speech community has not existed long enough yet as a community for complete norms to emerge, the nation being fairly young.

The judgments on the high end of the educational scale were associated with high judgments of intelligence and personal qualities, showing the emergence of some positive norms associated with French ability. However, these norms are undefined at the lower educational levels where ratings generally appear to vary independently. Group norms regarding ethnic identity were more frequently expressed than educational level norms but, in contrast to the educational norms, were inaccurate. Interestingly enough while these norms were inaccurate as far as identifying the speakers was concerned, they were accurate in reflecting the unequal regional and ethnic opportunities in the past for acquisition of French. Speakers rated as highly educated and intelligent were never identified as from the North or from Northern ethnic groups, even though one of the best educated speakers actually was from the North. Almost all identifications as the dominant Southern ethnic group were associated with high education and intelligence. Another indication that this general disparity between ethnic groups or regions is still felt was seen in the backgrounds of the respondents, where Southerners dominated the tenth-grade group and Northerners the no-education group. The above correlation between ratings of education, intelligence, and ethnic identity, in which the educational ratings were accurate and the ethnic ones were not, implies that the respondents made the education judgment first and then assumed the ethnic identity on the basis of stereotypes which have evolved from the historical situation. This would mean that prejudices based on ethnic rivalry, though they exist, do not take precedence over assessments of individual competence in the respondents' thinking.

Thus, the divisive effect of ethnolinguistic groups does not appear to be strong in Ivory Coast. Since ability in French, as noted by judgments on education and intelligence, separated some groups, it cannot be considered here as the neutralizing factor suggested by Inglehart and Woodward (2). What other factors are at work in Ivory Coast, then, to account for the relatively weak ethnic and language rivalry? Is it enough to hypothesize that people share the goal of acquiring competence in French, if not the actual achievement? Data gathered by the background survey and the attitude survey suggest some explanation for the matched guise results. A

goal by itself would probably be insufficient if people could not reasonably expect to achieve it or make significant progress toward it. The attitude survey showed that the respondents were eager to take courses which would improve their French along with other skills, demonstrating a positive attitude toward their personal possibilities. In addition, the background survey showed that, in fact, they had already participated in a wide variety of postschool courses. The presence of economic rewards at intermediate stages of mastery probably contributes to the fairly harmonious situation, also, since respondents stated general satisfaction with their positions, at all levels, even though they also wanted to improve. The postindependence increase in schools, while not yet adequate to serve the entire school-age population, has been dramatic. This increase has certainly contributed to the positive outlook of people, as has the fact that the school system is entirely tuition-free with room and board scholarships for a large portion of the secondary and university enrollment.

French, then, is a potential rivalry factor, since some norms correlating to ethnic divisions are emerging. However, this potential of French can be neutralized by certain economic factors. The economic factors so far proving useful are the widening access to regular education and to special adult courses, accompanied by rewards at various levels furnished by the rapidly growing economy, so that an individual's progress is tangibly marked. This study, then, points to economic factors as being the most crucial for intergroup harmony in developing polities, whether or not a world language, such as French, is used. World languages, by themselves, cannot be depended upon to neutralize potential or actual ethnolinguistic rivalries.

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DURKHEIM'S THEORY OF FATALISTIC SUICIDE: A CROSS-NATIONAL APPROACH*

Alma College

STEVEN STACK

SUMMARY

A neglected area of Durkheim's theory of suicide is the part where he deals with the opposite of egoistic suicide: fatalistic suicide or suicide resulting from overregulation. The present paper operationalized overregulation in political terms. A regression analysis using United Nations data on 45 nations found that indicators of totalitarianism, such as declarations of martial law and banning a political party, were significantly related to the rate of suicide independent of the control variables. A one percent increase in government sanctions was associated with a 13 percent increase in suicide.

A. INTRODUCTION

Sociological research on suicide has included a wide range of independent variables and theories. The spectrum of explanations has gone from rather reductionistic and biological theories, such as the argument that mentally disturbed persons will have a higher rate of suicide (2, 21, 25) and the notion that climatic factors such as heat contribute to stress and increase suicide (3, 20), to elaborate macrosociological theories which link the rate of suicide to societal conditions, such as the business cycle (14, 19), the level of economic development (24), and totalitarianism (7). The present paper tests a neglected theory of suicide, Durkheim's explanation based on sociological fatalism or overregulation. We explored the relationship between political overregulation and suicide under controls for two other theoretically relevant variables—the level of development and population density—with the use of the comparative method on data from 45 nations.

Fatalistic suicide constitutes Durkheim's fourth category of suicide and is

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largely the opposite of his third form, anomic suicide (7, p. 276). It results from excessive regulation, such as that of persons with futures blocked, aspirations choked by oppressive discipline, and persons living under physical or moral despotism. Extreme examples include the suicides of very young husbands and slaves. Fatalistic suicides involve an escape from a normative situation from which there is no appeal.

We anticipated that the incidence of fatalistic suicide would be related to the degree of political totalitarianism or overregulation in society. Conditions such as the banning of political parties, arrests or exiles of opposition politicians, declaration of martial law, and the closing down of newspapers and other elements of the mass media for purposes of censorship create a condition of overcontrol. In such a totalitarian environment, marked by relatively low freedom and respect for human dignity, already suicidal persons have an additional reason for viewing life as meaningless and are more apt to commit suicide.

Morselli (18) and Porterfield (22, 23) have advanced a theory of suicide based on the societal level of development or the extent of industrialization. As society develops along a continuum, similar to Tönnies' (30) *gemeinschaft-gesellschaft* polarity, from a simple, agrarian organization based on shared, traditional, and unquestioned norms, values, and beliefs to a complex industrial mass society based on heterogeneous, changing, and tenuous norms, values, and beliefs, we can expect that in the resulting normative confusion suicide will increase. Quinney (24), Ridker (26), and Stack (28) have advanced the notion that industrialization generally decreases the amount of status integration in society by increasing the confusion in the normative order regulating behavior. In industrial societies there is a greater probability for disagreement over what expectations should be associated with a status. The greater the level of development, the less the status integration and the greater the rate of suicide.

Research has found that population density has a positive impact on the incidence of deviant behavior including the rate of suicide (4, 13, 17). Population density is related to various stress and personality factors which underlie deviant behavior from the standpoint of psychopathological theory (16). These factors include several relevant to the determination of suicide: mental illness, punitiveness, and aggressiveness (5, 10, 11, 15). The research supports the hypothesis that man like other animals is adversely affected by overcrowding and that part of this adversity involves suicidal behavior. We anticipate that the higher the population density the higher the stress and the higher the rate of suicide.

8. METHODOLOGY

In order to fulfill the purpose of this investigation, a multiple regression analysis of the suicide rate on three independent variables was performed. A sample of 43 nations, representing all nations for which data were available, was chosen. The year for the analysis is 1970.

The present study utilizes data from official statistics on suicide rates. The data source is the United Nations (8). The data refer to the number of suicides per 100,000 population. As writers such as Douglas (9) point out, caution should be exercised in interpreting official statistics because of such problems as the possible underreporting of suicide by local authorities. However, research into this problem by Gibby (12) indicates that the measurement errors are probably not significant enough to preclude analysis. The data in the present study are the best cross-national data available and must be used until better data are made available.

1. *Political Totalitarianism*

Our measure of political totalitarianism was Taylor and Hudson's (9) index of government sanctions. A government sanction is an action taken by authorities to suppress a perceived threat to their power and the security of their regime. The major category of such sanctions is restriction on political participation. This type includes general restrictive measures such as the act of declaring martial law, instituting a curfew, and mobilizing troops for domestic security. More specific measures of such regulation include banning a political party, banning political rallies, the exile or deportation of persons for engaging in political action or for expressing opposition to the regime, removal of a government official for his political beliefs or activities, the arrest of opposition politicians considered to be "subversive," and the arrest or detention of persons reportedly involved in political protest actions. Also included in the index of governmental sanctions are cases of censorship to limit, curb, or intimidate the mass media (e.g., newspapers, radio, and television). Typical examples of this type of control include the shutting down of newspapers and the censoring of articles in the domestic press or dispatches sent out of the nation. The index of governmental sanctions refers to the total number of such sanctions from 1948-1967. We hold that a longitudinal measure of this variable is considerably more appropriate than a cross-sectional one, since the effect of some sanctions, such as a ban on a newspaper or political party may be cumulative over the years beyond the initial date of the suppression.

Caution should be exercised in interpreting our results based on this

index. First, it is a rather heterogeneous index and the items in it are not weighted according to some criteria of their significance. For example, arrests of "subversive" persons are counted along with deportations of such persons. The originators of the index were unable to devise a truly rational or scientific weighting procedure as a result of such problems as the often unclear context of the event. Second, there is some likelihood of significant underreporting from the more repressive countries. However, the Communist nations, which have a reputation for being the most totalitarian nations, are at the very top of the list in the rank order of nations on the index of totalitarianism. While these data may underestimate their true degree of repressiveness, they are in the proper relative position. Third, the index may understate the degree of repression in some nations, since it is insensitive to how long relevant forms of repression are in effect. Data indicating how long many sanctions were maintained are unavailable.

2. *The Level of Industrialization*

The level of industrialization was measured in terms of the per capita gross national product. The data are from Banks (1). Russett *et al.*'s (27) analysis of over 100 dimensions of societal organization in the Yale cross-national data archive determined that the GNP per capita was the best single indicator of societal development. It is, for example, highly correlated with many factors which should break down cultural homogeneity and erode status integration. These factors include the proportion of the population in cities over 20,000, the proportion of the population in higher education, the percent of the labor force employed in agriculture, and newspaper circulation (27, p. 277).

3. *Population Density*

Population density was measured in terms of the number of persons per square mile. The data are from Banks (1). This is one of the three basic ways of measuring population density. Some caution should be exercised in interpreting our findings based on this index of external density. There is some evidence that the most accurate measure of population density that is relevant to the problem of deviant behavior is the number of persons per building (13). Gillis found that after introducing some control variables, the incidence of deviant behavior at the census tract level was not sensitive to persons per square mile or an indicator of internal density, the number of persons per room. However, since the index based on building type (number of persons per building) is not amenable to cross-national investigations

where the unit of analysis is the nation as a whole, we use the measure of external density as a substitute.

C. RESULTS

All three independent variables had significant correlations ($p < .025$) with the rate of suicide. The variable with the strongest zero order correlation was the level of industrialization ($r = .504$). In addition, totalitarianism was also positively related to suicide ($r = .323$), as was population density ($r = .321$). There was very little multicollinearity between totalitarianism and the other explanatory variables ($r = .04$, $r = .06$). We anticipated that the significant relationship between totalitarianism and suicide would remain after the regression analysis. We did not expect that this was either a spurious or suppressed relationship. The remaining intercorrelation among the independent variables, that between population density and level of industrialization, was not significant at the .05 level. Therefore we anticipated that each explanatory variable would affect suicide independent of the other variables. At this elementary level of analysis we can conclude that a high degree of political overregulation, population density, and/or level of industrialization will tend to be associated with a high rate of suicide. In order to provide accurate estimates of the relative importance of the independent variables we turned to a regression analysis.

Table 1 provides the results of the multiple regression analysis. The t statistic for each of the three variables, respectively, indicated that the relationship with the rate of suicide was significant even if we control for the other variables. As anticipated, there were no spurious relationships. For example, if we control for level of industrialization and population density, there was still a positive and significant ($p < .025$) relationship between totalitarianism and suicide. In a similar vein we can say, even under controls for the other variables, the greater the level of industrialization the greater the rate of suicide. Finally, we can say the same about the positive relationship between population density and suicide.

We rank ordered the importance of the independent variables in explaining the variance in suicide by taking the absolute values of their beta coefficients. The betas indicated that the level of industrialization was the most important variable, followed by our index of totalitarianism (beta = .29) and population density (beta = .23). The calculated elasticity coefficient for totalitarianism indicated that for a one percent increase in government sanctions there was associated a .13 percent increase in the

TABLE 1
EFFECTS OF LEVEL OF INDUSTRIALISM, TOTALITARIANISM, AND POPULATION
DENSITY ON THE SUICIDE RATE IN 45 NATIONS

Variable	Regression coefficient	Standard error of coefficient	<i>t</i>	Beta coefficient
Index of industrializa- tion (1966)	.003	.001	3.716***	.456
Index of totalitarianism. government sanctions (1948-1967)	.005	.002	2.385**	.290
Population density (1966)	.001	.000	1.875*	.230

Note: $R^2 = .397$; $R'^2 = .353$; Intercept = 2.48027.

* $p < .05$.

** $p < .01$.

*** $p < .005$.

rate of suicide. In comparison, a one percent increase in industrialization was associated with a .37 percent increase in the rate of suicide. The significance of these results was also supported by the significant F ratio for the multiple correlation coefficient ($F = 9.0$, $df = 3/41$, $p < .01$). In addition, the regression equation explained 35 percent of the variance in suicide rates once we corrected the coefficient of determination for the problem of shrinkage in small samples (9, pp. 465-466).

D. CONCLUSION

This paper has performed a test of Durkheim's theory of fatalistic suicide. The results from a multiple regression analysis of data from 45 nations supported the notion that political overregulation affects the rate of suicide independent of several control variables.

While Durkheim's theory of fatalistic suicide was supported, Morselli's industrialization theory proved to be even more closely related to the incidence of suicide. However, it was unclear to what extent this was due to the breakdown in cultural homogeneity relative to other possible correlates of the modernization process. For example, Ellner (8, p. 190) suggests the hypothesis that modernization increases suicide not so much through confusion in the normative order but through the increasing amount of frustration experienced by the group of persons who fail to succeed in modern society which places increasing values on social mobility. Individuals compete fiercely for success. The harder one tries, the greater the frustration if one fails and the greater the probability of committing suicide.

Finally, our results suggested support for the thesis of such writers as Gillis (13) that overcrowding is associated with deviant behavior. Population density met the challenge of cross-national research after having been successfully tested with noncomparative samples by such writers as McCulloch *et al.* (17) for Scotland and Chuaqui *et al.* (14) for Santiago, Chile. Our use of multiple regression analysis allowed us also to explore this relationship more rigorously than in the previous research and to confirm it with a greater degree of certainty.

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CHILD-REARING PRACTICES AND GAMES OF STRATEGY¹

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SUMMARY

A cross-cultural study involving a basic sample of 117 societies was undertaken to test the hypothesis that disequilibrium facilitates cognitive development, and that a variety of different disequilibria even further ensures that effect. Disequilibrium was measured by child-rearing factors involving general frustration and deliberate instruction, and also by the presence of high gods in the society. Cognitive development was measured by the presence of games of strategy in the society. Each "independent" variable was related to the presence of games of strategy, and the cumulative effect of all factors was much stronger than any of them alone ($\chi^2 = 19.7, p < .001$).

A. INTRODUCTION

The purpose of the present research is to examine further the validity of the hypothesis relating stressful experiences in development to effective cognitive functioning in a cross-cultural setting. The particular model under consideration is based primarily upon psychoanalytic theory, as well as some traditional principles of education. The theory is that development proceeds out of a reaction to disequilibrium, and that without such a disruption/stress experience, the organism will maintain rather primitive patterns of behavior (3, 12).

Literature reviews have lent support to, though could not demonstrate the validity of, this theoretical model as an explanation of marasmus, enriched environment studies of animals, and "competence" behaviors (15, 16). Earlier empirical research (13, 14, 17) tested the basic hypothesis in a

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number of populations, both within American society and in a variety of cross-cultural settings. The basic paradigm was the same: measures of frustration/disequilibrium experienced in family child-rearing practices by the child in his first year of life were related to measures of cognitive development. In each case, the major child-rearing variable—somewhat different in each study—was significantly related to the indicator of cognitive development.

This paper makes three specific additions to the earlier techniques; it would

(a) Extend the relevant duration of frustration and stress beyond the first year of life. Basic psychoanalytic theory postulates the provoking effect of disequilibrium at any point in development. To be sure, Freud was very instrumental in calling attention to the importance of early years, but there may be nothing critical about any particular age period (15).

(b) Extend the definitions of frustration and stress beyond family interactions. Orthodox psychoanalytic theory has always focused its attention on nuclear family interaction, but there is nothing in the model that says that is necessarily so. Disequilibrium can be induced from a variety of sources, at least theoretically.

(c) Extend the definition of cognitive complexity to a variable more obviously independent of the influences of a society's general technological complexity. Here the concern is of a different order. In earlier studies the cultural measure of cognitive complexity had obvious ties to the society's technology (i.e., the calendar systems and the jurisdictional hierarchy). Statistical controls were used to demonstrate the main effect of child-rearing practices upon the cognitive artifact independent of the society's general technology. Nevertheless, a measure with no connections to technology would provide a clearer demonstration of the reality of the postulated psychodynamic.

A fourth modification of the original research lies in the hypothesis that there will be a *cumulative* effect of the uncomfortable situations; the more discomfort experienced, the more likely a society will be to develop appropriate cognitive mechanisms and capacities. Earlier studies had tested for the hypothesized *causal* relationship between only *one* child-rearing factor and the cognitive measure. The present study examined the increased strength of the statistical connection when *more, and more kinds of*, stress are added.

As is often the case in cross-cultural research, all of the variables in-

volved do not have an obvious face validity. There are four purported independent variable involved: (a) initial general frustration (first year of life), (b) extended general frustration (covering the first five years of life), (c) the presence of high gods in the society, (d) the presence of formal instruction in the society. The first two cases seem to have face validity supporting the disequilibrating character of the variable (see below).

The argument for the latter two variables is more indirect: the existence of high gods in a society is held to exert an impact on the members of the society such that they will continually strive to improve their functioning in a variety of ways. For the purposes of this study it is not necessary to decide whether the gods are perceived as threatening figures to be propitiated or else great dangers could ensue, or simply as positive role models whom one normally seeks to emulate. Psychodynamically, what is relevant is only that the gods are seen as stimuli inducing dissatisfaction in societal members with their own existing behavior. This will be the case no matter how supportive the gods are seen to be of the members of the society in which they are venerated.

Similarly, deliberate instruction is seen as inspiring or provoking its recipient to be dissatisfied with his present state. The quality and structure of the interpersonal interaction may differ along the range of existing instructional settings, from a formal, traditional classroom experience, to an informal apprenticeship. But in any situation where learning is involved, as Carl Rogers (9, p. 390) notes, "a threat to the self" is invariably involved. This must be so, regardless of how supporting the teacher is, and regardless of the subject matter under consideration.

Finally, for the purported dependent variable, the presumption is that the presence of games of strategy demonstrates the development of cognitive abilities in the given society, as well as the existence of a climate favorable to the exercise of mental capability. In addition, the abilities necessary to the category do not call for technical accomplishments on the part of the society. The last assumption was supported in a recent study by Smith and Crano (10) who considered 65 cultural traits (of largely technological and economic character) over a sample of 863 societies. The only variable related to level of games in a society was the presence of gods, a fact which will be explained in detail below, as attributable to quite other than technological factors. Thus, level of games in society seems to be at least relatively unaffected by the level of technical development in the society. Still, one study (8) did show a relationship between certain kinds of

games, and the related phenomenon of "cultural complexity," so the independence of game playing and cultural sophistication is not quite as complete as desirable.

B. METHODOLOGY

1. *Sample*

The basic sample of societies used for the study was selected from the list of 186 societies (plus 15 alternates) compiled by Murdock and White (7) to ensure representation of all major known cultural types, maximizing independence of the societies from each other. They report that the group of societies chosen is a "representative sample of the world's known and well described cultures, each 'pinpointed' to the smallest identifiable subgroup of the society in question at a given point in time" (7, p. 329).

Since each of the major variables (independent and dependent) have been scored by different authors, no two samples had exactly the same members. The present writer could not do the additional ratings without raising overwhelming issues of interrater reliability. Of the basic 186 societies, 74 had not been scored on the dependent variable, games of strategy, leaving a nucleus of 112 societies, supplemented by five of the substitute societies. A total of 33, 63, 76, and 32 societies, respectively, of these 117 societies had been rated on both one "independent" variable and on the "dependent" variable. Finally, there were a total of 19 societies rated on all four of the independent variables and the dependent variable.

2. *Procedures*²

In the present study, four sources of disequilibrium were identified:

a. A measure of general frustration during child-rearing in the first year of life. This measure consisted of a single score determined on the basis of the following seven characteristics (2, pp. 293-294): 1) Display of affection toward the infant; 2) Protection for environmental discomforts; 3) Degree of drive reduction; 4) Immediacy of drive reduction; 5) Consistency of drive reduction; 6) Constancy of presence of nurturant agent; 7) Absence of pain inflicted by the nurturant agent.

b. A measure of frustration encompassing a longer period of time in the development of the child by the family. This takes into account all relevant aspects of treatment and care, in particular expressions of affection and

² Further information on the specific definitions and their use in developing variables can be obtained from the author.

permissiveness, and the consistency and effectiveness of nurturance and care. The information on reward for crying and pain infliction are among the important criteria. Separate scores will be assessed for infancy and early childhood (1, p. 472).

c. *A measure of the presence of a high god in the society.* A high god is defined, following Swanson (11), as a spiritual being who is believed to have created all reality and/or to be its ultimate governor, even though his sole act was to create other spirits who, in turn, created or control the natural world. A high god was defined as present, whether or not he was described as active in human affairs (6, p. 52).

d. *A measure of the existence of deliberate instruction in the society.* By "deliberate instruction" we mean that process by which an adult, or at least a person of a senior age grade, takes a child or a group of children aside and attempts verbally to communicate to them certain ideas, skills, and facts. Such communication must take place on the initiative of the adult, and not be requested by the children, nor be the adult's response to a misdemeanor or omission by the child (which might be better called "scolding"). The motivation of the adult's behavior in such instances would seem to be the feeling that children need to be told certain things directly, or they will not learn them and thus not grow up to be culturally acceptable adults. Examples of deliberate instruction with which Western readers are familiar are the school, the catechism, and parental lectures to children (4, p. 322). Herzog (4) distinguishes between deliberate instruction by kin and nonkin, and with or without a change in residence. In addition, he distinguishes between an ethnographic report where such instruction is explicitly noted, or can only be inferred. The present writer has defined deliberate instruction as being present both when Herzog says it exists and when he only infers that it exists, in any of the situations noted (i.e., kin or nonkin as instructor, and regardless of location of instruction).

The dependent variable was games of strategy, as described in Murdock (6). Societies having any such games were contrasted with societies in which these games were absent, regardless of the existence of any other games.

C. RESULTS

The nonparametric chi square statistic was used to test the significance of the examined relationships. Unless otherwise noted, all chi square statis-

tics were 2×2 analyses. This technique was used to establish that none of the purported independent variables was related to any other, by making median splits of the four variables, and comparing them two at a time. In fact, no one of the four variables was related to any other.

Next, each independent variable was tested for its relationship to the dependent variable, games of strategy. All were found to have statistically significant connections or ones approaching significance, as follows: frustration in the first year of life ($\chi^2 = 5.9$, $p < .02$, Yates' correction used); frustration throughout childhood ($\chi^2 = 7.4$, $p < .01$); presence of high gods ($\chi^2 = 10.4$, $p < .002$); direct instruction ($\chi^2 = 3.3$, $p < .08$, Yates' correction used).

Given the author's assumptions about the independent contribution of each of the areas to the total cognitive development, it was decided to examine the effects of the cumulative impact of challenge/stress afforded by the independent variables. Such a task was complicated by the aforementioned fact that only 24% of the societies were rated on all four independent variables and the dependent variable as well. The results were still quite conclusive: Among those 19 societies, all five that fell on the "stress" side of the ledger on each of the four variables had games of strategy, while only one of the remaining 14 had that kind of games ($\chi^2 = 10.7$, Yates' correction used, $p < .001$). Moreover, the one apparent exception, the Tanala, is not so clearly an exception. It was classified by the respective coders as falling above the median on indulgence in the first five years of life (1), but it had the "lowest" upper score in the sample, just over the borderline. In addition, it was categorized as having no deliberate instruction of any kind (4). However, an ethnographic report by Ralph Linton appearing in Kardiner (5) describes how certain elders gave systematic and rigorous instruction in war games to the young people of the society, which clearly implies some very deliberate instruction to the present writer even though not so coded by Herzog.

A second, more complicated, means of testing the same hypothesis was undertaken in the following way: Societies were split into groups where all of the *existing* independent variable measures were indicative of stress/challenge as defined. There were 30 such societies; as noted above five were rated on all four measures, seven were rated on three measures, 11 were rated on two, and seven were rated only on one. Of the total of 30, twenty had games of strategy. In the remaining 48 societies, only eight had such games ($\chi^2 = 19.7$, $p < .001$). Eleven out of 12 societies, in which all of the existing measures of frustration indicated that only minimal levels of frus-

tration were present, had no games of strategy. That is, only 1 out of the 12 societies where all measures indicated indulgence of the children had games of strategy.

A final examination does not yield a formal treatment on inferential statistics, but is meaningful in its own right by offering a descriptive ranking of the cumulative effects of the independent variables. Thus, 2×2 chi squares were constructed relating (a) each of the four independent variables singly to the dependent variable (four such combinations), (b) each of the four independent variables in pairs to the dependent variable (six such combinations, for example, gods and deliberate instruction), and (c) each of the four independent variables in triplicate to the dependent variable (four such combinations).

The chi squares were then organized by considering only those societies rated on *each* of the independent variables. A split was made between societies which were rated below the median on *all* measures in the respective group, and those not so rated. The mean chi squares follow for variables taken *singly*, 6.8, for all *pairs* of variables, 7.9, and for all *triplets*, 8.8. Considering that the chi square for the 19 societies rated on *all four variables* was 10.7, we see a model progression as more variables cumulate. In addition, only two out of the 14 chi squares described above were greater than 10.7, although *all* of the chi squares yielded statistically significant relationships.

The last analysis built upon the one just described. Here instead of demanding that *each* society be rated on *all* the independent variables, it was necessary only that each society be rated on *at least one* of those variables. Of course, for the situation of the single variables, the mean chi square was the same, 6.8, for the pairs of variables, it was 12.6, and for the triplets, 15.5. The comparable result for the group of four variables taken together as a unit, noted above, was 19.7. Again, there is a very systematic progression of scores, with all chi squares statistically significant. The progression is made even more impressive in light of the fact that none of the 14 separate chi squares was larger than 19.7.

D. CONCLUSION

A strong relationship was shown to exist between a variety of indicators of a challenging or threatening environment and a cultural artifact which demands certain relatively abstract levels of problem-solving skills. Moreover, the relationship was strengthened when the environment was demon-

strated to have more of the stressful characteristics. The chi square statistic cannot prove the causal connections hypothesized by the author, but the data are strongly supportive of that connection.

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COOPERATIVE AND INDIVIDUALISTIC EXPERIENCES AMONG DISABLED AND NORMAL CHILDREN^{*†}

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SUMMARY

The effects of cooperative and individual learning experiences on friendly and hostile interaction between normal-progress and learning-disabled children in free-choice, postinstructional situations were studied. Twelve second and third grade elementary school boys participated in a study utilizing swimming classes. Three normal-progress and three learning-disabled Ss were assigned to each condition. Ss participated in a nine-day swimming course, learning swimming skills either individually or in cooperatively structured pairs. The results indicate that more friendly interactions in the postinstructional, free-swim periods occurred in the cooperative compared to the individual condition. More hostile interactions occurred in the individual condition. Learning-disabled Ss were ignored by their normal-progress peers more in the individual condition. Learning-disabled Ss in the cooperative condition learned more swimming skills than did their counterparts in the individual condition.

A. INTRODUCTION

Handicapped children are being integrated into regular classrooms to the maximum extent feasible under the assumption that increased proximity will lead to increased liking and appreciation of them by normal-progress students. Efforts to integrate handicapped and normal-progress students are based on the awareness that (a) students who are labelled as handicapped are perceived in negative and prejudiced ways by normal-progress peers and (b) such stigmatization leads to social isolation and the denial of human and material resources that influence academic aspirations and achievement, as well as general socialization. There is evidence, how-

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ever, that while contact between stigmatized and nonstigmatized students may be a necessary condition for reducing rejection and prejudice, it is certainly not a sufficient one (4, 5, 7, 8). The purpose of this study is to compare the relative effects of cooperative and individual instructional experiences on interpersonal attraction between normal-progress and learning-disabled children.

An important condition affecting interpersonal attraction is the situational goal structure. Two goal structures are implemented in this study: cooperative and individual (3, 6). In a *cooperatively* structured situation individuals' goal attainments are positively correlated; when one achieves one's goal all others with whom one is cooperatively linked achieve their goals. In an *individually* structured situation the goal attainment of each individual is unrelated to the goal attainment of others, and each person's rewards are contingent on his own performance irrespective of the quality of performance of others. These two goal structures will lead to different patterns of interaction among individuals; these interaction patterns in turn greatly influence the attitudes individuals form towards one another.

There is considerable evidence that cooperative interactions, compared with individual experiences, promote positive interpersonal relationships characterized by mutual liking and positive attitudes toward one another (6). These studies, however, have been conducted on normal-progress students. There is some evidence that cooperative interaction between low and high status educable mentally retarded pupils in special classes improved the social status of the low status children (2). A study specifically focusing on interpersonal attraction between learning-disabled and normal-progress students found that cooperative instructional experiences, compared with individual ones, resulted in more positive attitudes toward learning-disabled students by normal-progress students (1). There are two shortcomings of the above evidence. Student attitudes were measured through questionnaire items and sociometric devices. There is a need for behavioral evidence to validate the findings from paper-and-pencil measures. Second, while during a cooperative situation friendly interaction patterns are to be expected, there is little evidence as to the extent that such controlled interactions will affect free-choice interactions between stigmatized and nonstigmatized students after the learning activities have terminated. In addition, there is very little evidence concerning the relative effects of cooperative and individual instruction on the achievement of learning-disabled students. The present study was conducted to validate further the hypothesis that cooperative learning experiences, compared

with individual ones, will lead to greater interpersonal attraction of normal-progress students toward learning-disabled peers, by gathering behavioral data on free-choice interactions in postinstructional situations and by measuring the achievement of the learning-disabled students.

B. METHOD

Ss were 12 male children from the second and third grades of two elementary schools in western Connecticut and were from middle-class families. All had enrolled in a summer swimming program for beginner swimmers. Half of the Ss were children who participate in special classes for the learning disabled in their schools. All Ss were aware of who were labelled as learning-disabled by the schools. Before the first experimental session, each child was asked individually to choose which other child he would like to work with if they were to work in pairs. In this way, it could be determined whether or not the children who were labelled learning-disabled were actually stigmatized. No learning-disabled child was chosen by a normal-progress child, and only one learning-disabled child was chosen by another learning-disabled child. Thus, those children who were labelled as being learning-disabled were actually stigmatized individuals.

Ss were assigned to one of two conditions, cooperative or individual according to a stratified random procedure, with three learning-disabled and three normal-progress children in each condition. The *cooperative* condition was operationally defined by the following set of procedures: (a) a learning-disabled S was paired with a normal-progress S and told that they would be helping each other learn to swim, (b) each pair was positively reinforced verbally for performing each skill, (c) each pair was positively reinforced verbally for working together well, (d) Ss were told that their goal was for both members of the pair to learn each skill, (e) Ss were instructed to ask each other rather than the instructor for help, and (f) Ss were told that they would be evaluated as a pair rather than individually. The *individual* condition was operationally defined by the following set of procedures: (a) Ss were not paired, (b) each individual was positively reinforced verbally for performing each skill, (c) each individual was encouraged to work alone and was reinforced verbally for doing well on his own, (d) Ss were told that their goal was for each individual to learn each skill, (e) Ss were instructed to ask the instructor rather than each other for help, (f) Ss were told that they would be evaluated individually, and (g) Ss were reminded to pay no attention to the other members of the class during instruction.

The swimming classes were taught by two certified Water Safety Instructors who were trained in carrying out the cooperative and individual procedures. The Instructors team taught each condition. The instruction phase of each experimental session lasted for 45 minutes. Immediately following the instruction, Ss were told that they could have 15 minutes of free-swim time in which to do whatever they wished to do. This served as an observation period during which two trained, independent observers recorded the frequencies and nature (friendly or hostile) of interactions between normal-progress and learning-disabled Ss. There was 100 percent agreement between the observers as to the frequency of friendly and hostile interactions between normal-progress and learning-disabled Ss. The sessions were held four days a week for the first two weeks, and one day of the third week (nine days total). At the end of the nine instructional days, Ss' achievement in terms of acquired swimming skills was assessed according to a checklist of 20 skills that are generally acquired during such a course.

Descriptive statistics were used in interpreting the data because of the small number of Ss in each condition and the nonindependence of the interaction data.

C. RESULTS

The frequency of friendly and hostile interactions between normal-progress and learning-disabled Ss are presented in Table 1. As can be seen, there were more friendly interactions in the cooperative than in the individual condition ($p = .002$ by sign test). During the nine days there was only one friendly interaction observed in the individual condition and the highest number of friendly interactions in the cooperative condition oc-

TABLE 1
FREQUENCIES OF FRIENDLY AND HOSTILE INTERACTIONS

Day	Number of friendly interactions		Number of hostile interactions	
	Cooperative	Individual	Cooperative	Individual
1	6	0	0	1
2	14	0	2	3
3	0	0	4	3
4	3	0	4	3
5	8	1	0	7
6	4	0	0	4
7	13	0	3	0
8	20	0	0	0
9	19	0	0	3

occurred on days 7, 8, and 9, suggesting that the cooperative learning experiences become more instrumental in producing change over time. Frequencies of hostile interaction between normal-progress and learning-disabled *Ss* were generally higher in the individual than in the cooperative condition [although the difference did not reach an acceptable level of significance when the sign test was used ($p = .25$)]. These findings are supported by the observational evidence that learning-disabled *Ss* in the individual condition spent far more time alone during the free-swim period than did the learning-disabled *Ss* in the cooperative condition.

All the normal-progress *Ss* in both conditions mastered all 20 swimming skills. Two learning-disabled *Ss* were dropped from the analysis (one from each condition) because it was subsequently discovered that although they had been classified as beginner swimmers, both had had previous swimming instruction. In the cooperative condition the two learning-disabled *Ss* who took the test averaged 8.5 swimming skills mastered ($SD = .5$), while in the individual condition the two learning-disabled *Ss* who took the test averaged 1.5 swimming skills mastered ($SD = 1.28$).

D. DISCUSSION

Generalizations from this study are limited by the sample size, the length of the study, the characteristics of the *Ss*, and the specific operationalizations of the dependent and independent variables. The results can be generalized to Western cultures only.

Given these limitations, the findings indicate that cooperative learning experiences promoted more friendly interaction in free-choice postinstructional situations between normal-progress and learning-disabled children than do individual learning experiences. In addition, there were slightly more instances of hostile interaction in free-choice postinstructional situations between normal-progress and learning-disabled children in the individual condition than in the cooperative condition, and learning-disabled children spent more time alone in the free-choice postinstructional swim time in the individual than in the cooperative condition. Thus, cooperative learning experiences promoted interaction between normal-progress and learning-disabled children in free-choice, postinstructional activities, and that interaction was almost entirely friendly, while individual learning experiences relatively promoted little interaction between the two types of students, and what little interaction there was tended to be hostile.

Although the number of *Ss* in this study was small, the above results are important for methodological, theoretical, and practical reasons. Meth-

odologically, the behavioral nature of the dependent variable provides important validation for the findings of previous studies that used paper-and-pencil measures of interpersonal attraction. Theoretically, the findings provide evidence that the interpersonal attraction promoted by cooperative interaction extends into postinstructional, free-choice situations. Practically, the results provide further evidence that it is the way in which interaction between normal-progress and learning-disabled children is structured that determines whether contact reduces rejection of and prejudice towards the learning-disabled children.

There is an absence of evidence concerning the effects of cooperative and individual learning experiences on the achievement of learning-disabled students. It is not surprising that the results indicate that normal-progress children mastered more swimming skills than did learning-disabled children, as cognitive as well as physical abilities are necessary for such skill learning. The finding that the learning-disabled students in the cooperative condition mastered more of the swimming skills than did their counterparts in the individual condition generally supports the evidence on normal-progress students (6). Because of the small size of the sample, conclusions need to be very tentative, but it appears that cooperative groups made up of both normal-progress and learning-disabled students are more effective in terms of achievement of learning-disabled children than is individualistic instruction.

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BLACK ACHIEVEMENT IN A DESEGREGATED SCHOOL DISTRICT*

Dallas Independent School District

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SUMMARY

This study compared the achievement of black students ($N = 1115$) who attended segregated schools with the achievement of black students ($N = 810$) who attended desegregated schools. Analyses of covariance indicated that after controlling for previous achievement level, student sex, prior school experience, social status, parental involvement, and attitude toward education the segregated black students had the highest adjusted language arts, reading, and mathematics posttest scores. In addition to differences in ethnic composition between the segregated and desegregated schools, several potential confounding factors could have caused these results.

A. INTRODUCTION

The Dallas Independent School District has been involved in desegregation litigation since 1955 when the NAACP filed its first desegregation suit against the District. In 1961 a court-ordered plan was implemented which desegregated the first grade immediately and proposed to desegregate one grade each year thereafter. In 1965 an acceleration of the plan was ordered, and implementation was completed in 1967. However, in 1970 a new suit was filed against the District to eliminate all of the remaining segregated schools. A second court order was handed down in 1971. This order called for busing secondary students and "integrating" elementary students by television. Pending an appeals court ruling, much of this plan was stayed (including the television portion of the plan). In 1975 the appeals court ruled that the 1971 plan was inadequate, and a third desegregation order was handed down in 1976.

The 1976 order divided the District into six subdistricts, four of which were required to approximate the District's ethnic composition (41% Anglo,

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45% black, 13% Mexican-American, 1% other) within plus or minus 5%. In three of these four subdistricts approximately 16,000 students were bused out of their neighborhoods to achieve the necessary ethnic balance. Because of their geographic location, the two remaining subdistricts were exempt from the ethnic composition requirement. One of these was left majority white (approximately 80% of its 2000 students were white) while the other remained almost totally black (approximately 98% of its 26,000 students were black).

The focus of this study was on the black students in the segregated and desegregated subdistricts. Specifically, the primary purpose was to compare the achievement of black students attending segregated schools with the achievement of black students attending desegregated schools.

B. METHOD

1. *Samples*

Two populations were of interest. The first consisted of 1987 black students who were fourth graders in the Dallas Independent School District during the 1976-1977 school year. They attended 16 segregated intermediate schools which were not impacted by the 1976 Federal Court Order. From 1976 to 1978 the percentage of black students in these schools ranged from 87.4% to 99.7% with a median percentage of 98.3%. A sample of 1115 students was selected from this population. All attended the segregated schools for the 1976-78 school years and were administered achievement tests in the fall of 1976 and the spring of 1978. In addition, complete background—sex, socioeconomic status (SES), family environment, and attitudinal data—were available for each student.

The second population consisted of 1818 black students who also were fourth graders in the Dallas Independent School District during the 1976-77 school year. These students attended 27 intermediate schools desegregated by the 1976 Federal Court Order. From 1976 to 1978 these schools had black percentages ranging from 4.9% to 65.4% with a median percentage of 29.8%. The sample that was selected from this population consisted of 810 black students who attended the desegregated schools during 1976-77 and 1977-78 and had complete data. These students, like their segregated counterparts, were administered achievement tests in the fall of 1976 and the spring of 1978. Complete background—SES, family environment, and attitudinal data—were available for each student.

2. *Dependent Variables*

The dependent variables (or posttest measures) were grade-equivalent scores on the Iowa Tests of Basic Skills (ITBS) language arts, reading, and mathematics subtests. More specifically, they were ITBS subtest scores from testing which took place during April of 1978, or almost two years after the initiation of desegregated schooling.

3. *Independent Variable*

The independent variable was desegregation status. Black students were classified as "segregated" if, during 1976-78, they attended one of the 16 nonimpacted intermediate schools which had black enrollments ranging from 87% to 100%. If, during 1976-78, they attended one of the 27 impacted intermediate schools which had black enrollments ranging from 5% to 65%, they were classified as "desegregated."

4. *Control Variables*

The control variables were student sex, elementary school proportion Anglo, the pretest measures, a measure of attitude toward education, a measure of parental involvement, and three measures of SES.¹ Elementary school proportion Anglo was the proportion of Anglo students in the school attended by the student during the 1975-76 school year. The pretest measures were ITBS language arts, reading, and mathematics grade-equivalent scores from testing which was coincidental with the initiation of desegregated schooling (September of 1976). Attitude toward education was a measure of a student's enjoyment of school, desire to remain in school, aspirations to attend a university or college, and desire to be better at schoolwork than at games. Parental involvement was measured by a student's perception of his/her parents' willingness to spend time with him/her, and be available when needed.

SES was measured by a student's scores on three dimensions: material possessions, family size, and social-cultural activities. High scorers on the material possessions dimension were more likely to come from families having washing machines, color televisions, two or more cars, vacuum cleaners, and telephones. High scorers on the family size dimension tended to come from smaller families with fewer children, and they were more

¹ The measures of attitude toward education, parental involvement, and SES represented scores on selected factors which were isolated by factor analyzing student responses to a wide range of social class, family environment, and school-related items.

likely to have a room of their own. On the social-cultural activities dimension high scorers were more likely to have had private lessons, belong to clubs requiring dues, and have study desks of their own. They were also more likely to live in a home that has a piano, have parents who belong to study, civic, or social clubs, and leave town every year on a family vacation.

5. *Design and Analysis*

Separate analyses of covariance were used to compare the language arts, reading, and mathematics achievement of the segregated and desegregated black students. Specifically, these analyses utilized in turn the ITBS language arts, reading, and mathematics posttest scores as dependent variables; student sex, elementary school proportion Anglo, the ITBS language arts, reading, or mathematics pretest score, the measure of attitude toward education, the measure of parental involvement, and the three SES measures as control variables; and desegregation status as the independent variable. Prior to using the covariance analyses, checks were made on the assumption of homogeneous regression coefficients. The assumption of equal regression slopes was tenable in each case, thus permitting the use of the conventional analysis of covariance.

C. RESULTS

After adjusting for the control variables, the differences between the segregated and desegregated black students were significant [$F(1, 1915) = 31.61, p < .001$ (reading); $F(1, 1915) = 49.81, p < .001$ (language arts); $F(1, 1915) = 30.08, p < .001$ (mathematics)]. In all three achievement areas, the segregated black students had higher adjusted posttest scores, while the desegregated black students had lower. A summary of the reading, language arts, and mathematics analyses is presented in Table 1.

D. LIMITATIONS

It is important to point out several limitations of this study. First, although many relevant control variables were utilized (more than in most other studies), there is the threat of nonequivalent comparison groups because the groups were not formed by randomization. For example, the segregated black students might have been more able than the desegregated black students. Thus, the differences in achievement between the segregated and desegregated black students might have been due to differences in ability, rather than to differences in desegregation status.

TABLE 1
MEANS OF CONTROL VARIABLES, UNADJUSTED POSTTEST SCORES, AND ADJUSTED
POSTTEST SCORES FOR THE SEGREGATED AND DESEGREGATED BLACK STUDENTS

Variable	Segregated (N = 1115)	Desegregated (N = 810)
Control variables		
Proportion female ^a	.50	.54
Elementary school pro- portion Anglo	.03	.11
Attitude toward education ^b	-.14	.01
Parental involvement ^b	-.08	-.12
Material possessions ^b	-.04	-.30
Social-cultural activities ^b	-.03	-.14
Family size ^b	-.14	-.15
Reading pretest score	2.90	2.76
Language arts pretest score	3.06	2.95
Mathematics pretest score	2.92	2.83
Unadjusted posttest scores		
Reading	4.08	3.68
Language arts	4.30	3.88
Mathematics	3.95	3.65
Adjusted posttest scores		
Reading	4.03	3.75
Language arts	4.25	3.95
Mathematics	3.91	3.71

^a While student sex was the actual control variable, proportion female is reported in this table.

^b The distributions of the attitude toward education, parental involvement, material possessions, social-cultural activities, and family size scores were standardized to a mean of 0 and a standard deviation of 1.

Second, it was assumed that the segregated schools were equivalent, except for ethnic composition, to the desegregated schools. In actuality this may not have been the case. As compensation for not being included in the desegregation plan, the Dallas Independent School District allocated a disproportionate share of federal aid and personnel to the segregated schools. For example, consider the number of demonstration teachers and teacher aids implementing the federally funded reading and mathematics programs in the segregated and desegregated schools. Twelve mathematics and 21 reading demonstration teachers were assigned to the segregated schools, while no mathematics and one reading demonstration teacher was assigned to the desegregated schools (4). Thirteen mathematics and 54 reading teacher aids were assigned to the segregated schools, while one mathematics and 27 reading teacher aids were assigned to the desegregated schools (4). Imbalances such as these could have influenced the relative

effectiveness of the educational programs in the segregated and desegregated schools.

Third, the generalizability of the results may be limited. Because the samples only included students with complete data who remained in the District over the course of the study, it is possible that the results would not hold for those students who left the District or for those students without complete data. In experimental design terms, the possibility of a selection-treatment interaction exists and was not controlled.

E. DISCUSSION

A review of 15 published and 19 unpublished studies reveals that desegregation has been associated with larger gains in black achievement more often than it has been associated with smaller gains (11). In addition, desegregation has been associated most often with no differences or mixed results. For example, six of the 15 published studies found larger gains in achievement (2, 5, 8, 9, 13, 14), while nine found no differences or a mixture of no differences and larger gains (1, 3, 6, 7, 10, 12, 15, 16, 17). Four of the 19 unpublished studies found larger gains in achievement, one found smaller gains, and 14 found no differences or mixed results.

It would appear that there is considerable ambiguity concerning the effects of desegregation on black achievement. Yet in actuality this may not be the case. Depending on the definition of desegregation we adopt, the studies should be (a) considered as a group to be of limited validity or (b) considered individually.

We could limit the definition of desegregation to the mixing of ethnic groups. If we do, then all of the studies are of limited validity. Given the real-world constraints under which researchers must operate, it has been extremely difficult to isolate situations differing only in terms of ethnic composition. "Desegregation" is never a pure treatment. There is always some degree of confounding. For example, segregated and desegregated schools never have completely equivalent facilities, teachers, and instructional programs.

We could also allow the definition of desegregation to encompass all of the specifics of a particular desegregation plan. For example, it could include the allocation of personnel and facilities, the development of curricula and instructional programs, and the attitude of the community, as well as the mixing of students of different ethnic groups. As a result of some plans, blacks in desegregated schools may have better trained teachers or better curricula. Yet other plans could result in improved programs

and better facilities for blacks in segregated schools. Because no two plans are exactly alike, it is apparent that each study has determined the effects of a slightly different treatment. Hence, it is difficult, and may even be erroneous, to compare the results of different studies and make generalizations about the effects of desegregation on black achievement.

The results of the present study do not indicate whether ethnic mixing leads to higher or lower black achievement. Although the blacks who attended segregated schools had higher adjusted achievement test scores than the blacks who attended desegregated schools, these results could have been caused by lack of subject and/or school equivalence, as well as by differences in ethnic composition between the segregated and desegregated schools. Because of this potential confounding, it is misleading to make a statement about the effects of school ethnic composition on black achievement.

However, we can make very limited statements about the effects of the Dallas Independent School District's desegregation plan on black achievement. The plan appears not to have adversely affected the achievement of our sample of segregated black students. We are equating cognitive performance to achievement test results, when, in fact, achievement tests may be imperfect measures of cognitive performance. However, it also appears not to have facilitated the achievement of our sample of desegregated black students. Perhaps the desegregated schools were disrupted by the influx of new students, or perhaps the increased support for the all-black schools resulted in superior educational programs. In any case, the results of this study again raise the question of whether the most effective way to increase black achievement is through desegregation or through improving the quality of instructional programs in segregated schools.

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INTERPERSONAL GAZE AND HELPING BEHAVIOR^{*1}

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SUMMARY

A field experiment was conducted assessing the effects of interpersonal gaze upon helping behavior. Three hundred twenty men and women were approached by a male or female confederate with his arm in a sling who, upon dropping some coins, either looked or did not look at the bystander. The results indicated that gaze was associated with increased helping when both victim and bystander were female and decreased helping when the two were males. The findings of the study suggest that interpersonal gaze may be interpreted differently by the sexes during dyadic helping interactions.

A. INTRODUCTION

Investigations into altruism and helping behavior reveal that though the phenomenon is multifaceted [for extensive reviews, see Bar-Tal (2), Krebs (9), Macaulay and Berkowitz (13)], there are at least three factors common to most situations in which it transpires. The potential helper must first realize that something has occurred and the victim needs and/or desires help. As Latané and Darley (12) have pointed out, the recognition that a situation constitutes an emergency is likely to affect the probability of intervention. Moreover, a number of studies has indicated that variations in the degree of the potential recipient's dependency (3, 4, 5) and need (14) differentially affect the probability of obtaining aid. Second, an individual must perceive himself as having the ability to render assistance: Although in many cases helping requires no elaborate technical knowledge, there are often instances in which a minimal level of competence is necessary for direct intervention (6). Finally, when more than a single course of action is

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possible, the bystander must ultimately decide which one is to be taken

It is apparent that the process of eliciting aid is a form of social interaction involving a communication of need and the establishment of at least a transient relationship between victim and bystander. While several investigators have concentrated on the verbal aspects of requesting help (10, 11), there is a scarcity of research directed towards a systematic examination of the role played by nonverbal cues despite the fact that their importance in everyday interpersonal interactions is well-documented (17).

Of the various forms of nonverbal behavior, interpersonal gaze may be the most efficacious mode of establishing an immediate (although often momentary) relationship with someone. The nature of the relationship depends upon a multitude of factors, such as the situational context, the length of the gaze, accompanying facial expression, and characteristics of the individuals involved. The response which follows, however, when a person is looked at is largely a consequence of the meaning of the gaze for that person. Prolonged gaze, for example, may precipitate either avoidance (8) or approach (7) depending upon the context in which it occurs. Similarly, the significance of gaze appears to be affected by the gender of the interactants. While gaze is likely to function as an affiliative gesture for females (1, 15), dominance or threat may be communicated between males (16). Undoubtedly, this cue may signal any number of other types of relationships as well.

If gaze is important in establishing transient relationships between people and if the nature of such relationships can be assumed to influence helping behavior, whether a victim gazes at a bystander should affect the probability of help being offered. Moreover, it should do so in the absence of any explicit request for help (7). Though predicting the specific effects of gaze or its absence (gaze avoidance or aversion) upon helping is difficult in light of the multiplicity of meanings which may be cued, it could generally be expected that a look which creates a positive relationship would increase helping and one which establishes a negative relationship would decrease helping.

B. METHOD

1. *Subjects*

One hundred sixty males and 160 females waiting alone on bus stops in various areas of Staten Island, New York, served as Ss. The experimental sessions were conducted on both weekday afternoons and weekend mornings. All Ss were white and estimated to range in age from 17 to 65 years.

2. Procedure

Provided there was no bus in sight, the *S* was approached by one of four white confederates (*C*s), who included two females aged 18 and 20 and two males aged 21 and 24, each dressed in blue jeans and a pullover, with a sling on the arm most frequently used. The "victim" positioned himself directly facing the *S* at a distance of approximately seven feet. With obvious difficulty, he tried to obtain several coins from a pants pocket opposite the hand that was free, and finally dropped about eight pieces of change while taking the hand from the pocket. For bystanders randomly assigned to the gaze condition, the victim (blind to the experimental hypotheses) looked at the person during a five second period beginning immediately after the change fell. If the bystander looked at the victim's eyes during this time, eye contact was allowed to be momentarily established and the victim then looked away for the remainder of the five second period. In the no gaze condition, the victim spent the five second period looking at the ground. In both conditions, he proceeded to pick up the scattered coins immediately after the time period elapsed. If, at any point before the money was completely recovered, the *S* either directly picked up some change or pointed to its whereabouts, the individual was considered to have helped. Although the victim maintained a neutral expression and did not speak throughout the entire incident, he later thanked each person who helped.

After the experimental procedure was completed, the episode was terminated in either of two ways. If the bus appeared, the victim simply stepped back from the bus stop pretending not to want that particular bus. (This was perfectly plausible since, the bus stops were located at points wherein several lines converged.) On the other hand, if the bus was not coming, he mumbled something about walking to the next bus stop and then proceeded in that direction. Once the *C* returned to the car in which he was being driven, he recorded whether the *S* had helped.

C. RESULTS

The total proportions obtained by combining the frequencies for the two victims in each of the cells (4 gender combinations of victim-bystander pairs \times 2 conditions of gaze) were entered in a 4×2 analysis using the arcsin transformation method of Langer and Abelson (11) for analysis of proportions. While there was no significant main effect for gaze, there was a significant interaction between gender combination and gaze condition ($z = 2.25, p < .05$). In addition, there was an unexpected effect for gender

combination ($z = 2.19, p < .05$). This was apparently due to a main effect for sex of the victim, which was revealed in a subsequent $2 \times 2 \times 2$ analysis (gaze condition \times gender of bystander \times gender of victim), $z = 2.04, p < .05$, indicating that the male Cs had received more help.

The effect of gaze was also analyzed within each gender combination separately, and significant differences were found for both same-sex dyads. For the female-female combination, *more* help occurred when the victim looked (53%) than when she did not (13%), $z = 6.77, p < .001$. Conversely, gaze was associated with *less* help (40%) than no gaze (68%) within the male-male pairs, $z = 2.55, p < .01$. There was no significant difference, however, in the frequency of helping between the two gaze conditions for the mixed dyads.

D. DISCUSSION

The results indicate that the presence of the victim's gaze affected the bystander's helping behavior when interpreted within the framework of different gender combinations and when employing American men and women as Ss. Helping behavior within mixed-sex pairs was not significantly affected by gaze. In contrast, the effect of looking was to increase the rate of assistance by 40% for female interactants and decrease it by 28% when both were men. These findings suggest, then, that the manipulation of gaze had a substantial impact when the bystander was of the same sex as the victim and therefore speak to the issue of the meaning of gaze, or its absence, within dyadic interactions. Before any further discussion, however, it should also be noted that since the interpretation of gaze may vary from one culture to another, generalization of the results and interpretation of this study across cultures should be exercised with some caution.

Gaze may serve a powerful affiliative function (1, 15) when both victim and bystander are women, creating a positive connection between the two. Thus, a female victim's glance is likely to be interpreted by a female bystander as friendly and thereby increase the probability that assistance will be given. It is also possible that when two women meet with no one else present, not looking is as salient as its alternative, especially when the situation is one in which the two might potentially become involved with each other. Such is the case when one of them requires help. In the latter situation, the lack of the expected gaze by the victim could plausibly inhibit approach by the bystander, and the very low rate of helping in the no gaze condition for female-female pairs is consistent with this interpretation.

In rather striking contrast, the findings for the male-male pairs suggest

that, for them, the victim's gaze may have functioned as a dominance or threat signal (16), "warning off" the male bystander or indicating that the victim was "dominant" (capable, self-sufficient) and did not require help. When the male victim chose to look at the ground instead of the male bystander the dominance relationship may have been reversed, with the bystander interpreting the victim's behavior as a sign of need, or, perhaps, even as deference, resulting in a higher rate of helping.

Finally, the lack of a systematic relationship between looking and helping for mixed-gender pairs may have been a consequence of the multiple meanings of gaze in this context. Either there was uncertainty as to what the gaze signified for any given *S* or, while each *S* made an unambiguous attribution, its nature varied among them. Both possibilities would have prevented an average effect from emerging across *S*s, and the complexity of this problem may have been added to by the study's failure to account for the possible effects of the victim's position (e.g., upright or bending) at the time help was received.

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THE EFFECTS OF REPEATED AGGRESSIVE ENCOUNTERS ON SUBSEQUENT AGGRESSIVE BEHAVIOR*¹

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SUMMARY

The effects of repeated encounters in the laboratory on subsequent aggressive behavior of Ss competing in a reaction-time task were investigated in two studies of male undergraduates. In Study I ($n = 20$), it was observed that following two sessions in which they competed with aggressive opponents, Ss evidenced a tendency to initiate attacks against an unfamiliar competitor. The results of Study II ($n = 30$) suggested that the information received by the Ss indicating the aggressive intent of the opponents, rather than the behavioral involvement in the aggressive encounter, was responsible for the observed increase in unprovoked attacks.

A. INTRODUCTION

Numerous studies have demonstrated that without receiving specific information concerning a target's intent to harm, American Ss are generally reluctant to initiate aggressive acts (1, 9, 10). Yet, a minority of Ss have been observed to violate this norm of reciprocity (6). What provokes this initial attack? Some researchers maintain that the possibility of monetary gain (2) or the ingestion of alcohol (7) are often responsible for such behavior. However, given no possibility of instrumental gain, some nonintoxicated Ss have still attempted to inflict pain upon a target without previous knowledge of his aggressive intentions. The purpose of the studies presented in this paper was to investigate the influence of previous experience with unprovoked attacks on the tendency to initiate aggressive behavior.

The paradigms utilized in the laboratory to investigate the determinants

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of physical aggression involve placing Ss into a situation in which they could shock and/or be shocked by a peer. Typically, the Ss are provoked, allowed to retaliate, and released in one experimental session. Very little attention has been directed toward determining the effects of repeated attacks, from different attackers, on the tendency to initiate aggressive acts. If physical attack elicits aggressive responses by means of transient, emotional, or reflexive mechanisms, then the effect of repeated attacks in the laboratory should be transitional. However, if recurrent attacks influence a victim's expectations concerning the aggressiveness of others or the appropriateness of reacting aggressively in a particular situation, he may attribute aggressive intent towards others in the situation and initiate attacks against these potential provocateurs.

Study I was designed to investigate the effects of repeated attacks, from different individuals, on subsequent tendencies to initiate attacks. During two separate sessions, the experimental Ss competed with aggressive opponents in a reaction-time task developed by Taylor (8) to investigate interpersonal aggression. Experimental and control Ss competed with nonaggressive opponents during the third session. It was hypothesized that the recurrent attacks experienced during the first two sessions would influence the Ss' behavior during the third session. More specifically, it was predicted that relative to a group of Ss which did not experience physical attacks, the Ss in the experimental group would both initiate and sustain against the third, nonaggressive opponent.

B. STUDY I

1. Method

a. Subjects. Twenty male undergraduates, enrolled in an introductory psychology course at Kent State University, who set low shock intensities (1 through 5) on the first trial, served as Ss. They were randomly assigned to either an Experimental or Control condition.

b. Procedure. The S was seated at the task board [described in Taylor, (8)], and the shock electrode was attached to his left wrist. After the S's "unpleasantness" threshold for shock was determined, he heard a tape recording of the task instructions.

Each S was told that he was competing with another S in an adjoining room on a task involving reaction time. At the beginning of each trial, he was instructed to select (by pressing one of 10 buttons) any one of 10 intensities of shock that he wished his opponent to receive. He was in-

formed that the shock would be administered to his opponent at the end of a trial if he was faster than his opponent, and that he would receive the shock of his opponent set for him if his opponent was faster. Thus, he realized that either he or his opponent would receive a shock, depending upon the outcome of the competition, and that both could select the intensity of the shock the other would receive.

Actually, there was no opponent. The frequency of wins and losses and the amount of shock received were programmed by the *E*.

Immediately after the task instructions were heard, the trials began. Each trial consisted of four specific events: (a) a signal to set the level of shock that the *S* wished his opponent to receive; (b) a ready signal, where the *S* pressed his finger down on the telegraph key; (c) the trial itself, where the *S* released the key as quickly as possible; and (d) a feedback signal that consisted of a light that indicated the amount of shock that had been set for the *S* by his opponent and if the opponent was faster, the shock as well. The four events and the intertrial interval were of 5 sec duration each. The shock, when appropriate, was of 1 sec duration.

All *Ss* lost 50% of the trials, according to several predetermined orderings. Two exceptions to the predetermined orderings were made. When possible, if an *S*'s reaction time was extremely fast on a given trial, he was not shocked on that trial. If his reaction time was extremely slow on a given trial, he was shocked on that trial.

In establishing the intensities of shock to be administered to each *S*, the intensity judged as "definitely unpleasant" was designated as number 10, number 9 was set at 95% of maximum, number 8 at 90% of maximum, number 7 at 85% of maximum, etc.

c. Experimental manipulations. Each *S* participated in three separate sessions and was informed at the beginning of each of the latter two sessions that his "opponent" was a "different" person than the one with whom he had previously competed. The sessions took place within a period of one week.

Those *Ss* assigned to the Experimental condition encountered an aggressive opponent during the first two sessions. The average shock intensity set by the opponent during the 12 trials of each of these two sessions was 9.0; the range was 8-10. During the third session the *Ss* in the Experimental group encountered a nonaggressive opponent: i.e., an opponent who continually set the lowest shock intensity (Number 1).

Ss assigned to the Control condition did not actually compete with their opponent during the first two sessions. Instead, the experimental sessions

were terminated, presumably because of equipment failure, after the *Ss* had selected the shock intensity they wished to give their opponent on the first trial. Thus, the *Ss* in the Control condition received neither shocks nor feedback from the opponent during the first two sessions. The third session was identical for the Experimental and Control *Ss*: the opponent set minimal shock intensities (1's).

2. Results

According to an analysis of variance of the mean shock intensities set by the *Ss* in the Experimental and Control groups on the *first* trial in each of the three sessions, aggressive behavior increased significantly over sessions ($F = 10.88$, $df = 2/36$ $p < .001$). The mean first trial shock intensities set during the three sessions were 3.8, 4.4, and 5.4, respectively. Differences in aggression between the Experimental and Control conditions were significant at the .02 level. Average aggression scores for the Experimental and Control groups were 5.5 and 3.6, respectively.

The interaction of Groups and Sessions was significant at beyond the .001 level ($F = 13.9$, $df = 2/36$). While the mean shock intensities set by the Experimental Group consistently increased over sessions (3.8, 5.6, 7.2), the mean shock intensities selected by the Control Group remained relatively constant (3.8, 3.3, 3.6).

The above results demonstrate that repeated encounters with an aggressor influenced an *S's* tendency to initiate aggressive acts. In order to determine the effect of the repeated encounter on the experimental *S's* response to provocation, an analysis of variance of mean shock settings was performed on the two blocks of attack trials within each of the first two sessions. According to this analysis the *Ss* in the Experimental Group tended to be more aggressive during the second session. The mean shock intensities set by these *Ss* during the first and second sessions were, respectively, 7.37 and 8.16. This effect is significant at the .06 level. During both sessions the *Ss* significantly increased their aggressive responses over blocks of trials ($F = 5.30$, $df = 1/9$ $p < .05$). The mean shock setting for Blocks 1 and 2 were 7.5 and 8.1, respectively. The Sessions \times Blocks interaction did not approach significance at the .05 level. Thus, in both sessions retaliatory behavior increased in a similar manner.

An analysis of variance performed on the shock intensities set during the third session showed that the *Ss* in the Experimental Group behaved in a more aggressive manner toward the nonaggressive opponent than the *Ss* in the Control Group ($F = 8.37$, $df = 1/18$, $p < .01$). Average shock inten-

sities set by the Experimental and Control groups during the competitive session were 5.39 and 2.58, respectively. While the Blocks effect approached significance ($F = 3.43$, $df = 1/18$, $p < .10$), indicating a tendency for both groups to reduce the intensity of their attack over trials, the Groups \times Blocks interaction did not approach significance. The average shock intensities set by the Ss during Block 1 and Block 2 were, respectively, 4.39 and 3.58.

C. STUDY II

The purpose of Study 2 was to attempt to determine the contribution of the S's actual behavioral involvement in the aggressive encounter on the tendency to initiate attacks. This was accomplished by comparing the aggressive behavior of two groups: one in which Ss competed with aggressive opponents and one in which Ss only observed the feedback received by other participants. If behavioral involvement is essential for the development of an attack tendency, the active participants should display more intense aggressiveness toward a new opponent than the observers. On the other hand, if the reception of information concerning the aggressiveness of others is the necessary and sufficient condition for the acquisition of such a response, then there should not be an appreciable difference in aggressive responding between the two groups.

1. Method

a. Subjects. Thirty male undergraduates served as Ss. Participation was in partial fulfillment of the course requirements.

b. Procedure. Each S was randomly assigned to one of three conditions: Attack Observation, No-Attack Observation, and participation. The 10 Ss in the Participation condition competed against three different male opponents, with a 10 min rest period between contests. The first session consisted of 12 trials in which the feedback settings averaged 7.5. In six of these trials, the opponent's shock setting was 7 and in the other six trials, 8. In the second 12-trial session, the average shock setting was 8 (the opponent set equal numbers of 7's, 8's, and 9's). The third session consisted of six trials in which the feedback settings averaged 1.5. In three of these trials, the shock setting was 1 and in the other three trials, 2. The Ss were programmed to win 50% of the trials within each of the sessions.

The 10 Ss in the Attack Observation condition observed an encounter between two different pairs of opponents (confederates). During each of the first two sessions, the Ss were positioned behind one of the opponents in

such a manner as to allow them to observe one of the competitor's feedback panels. Their role was to observe the panel and attempt to predict the shock settings of the opponent in the other room. The feedback settings observed by the *Ss* in the Attack Observation condition were identical with those observed by the *Ss* in the Participation condition.

The 10 *Ss* in the No-Attack Observation condition observed two sessions in which the opponent behaved in a nonaggressive manner. Both sessions consisted of 12 trials in which the feedback settings averaged 1.5. In six of the trials, the setting was 1 and in the other six trials, 2.

During the third session, the *Ss* in the Attack and No-Attack Observation conditions also competed with an opponent who set low intensity shocks (six trials in which the feedback settings averaged 1.5).

In summary, following the two sessions in which *Ss* either competed with an aggressive opponent, observed an aggressive opponent, or observed a nonaggressive opponent, all *Ss* competed with a nonaggressive opponent.

2. Results

Aggression was measured by the intensity of electric shock the *S* set for his opponent to receive on each of the six trials in the third session. According to an analysis of variance performed on the aggression scores, the main effect of Conditions was significant at the .001 level ($F = 8.95$, $df = 2/27$). The mean shock settings for the Participation, Attack Observation, and No-Attack Observation conditions were, respectively, 4.62, 4.78, and 2.12. Newman-Keuls analyses indicated that the mean shock intensity set by the *Ss* in the No-Attack Observation condition was significantly lower than the mean shock intensity set by the *Ss* in the other conditions. However, the mean shock intensity set by the *Ss* in the Participation condition was not significantly different from the mean shock intensity set by the *Ss* in the Attack Observation condition.

The trials effect was significant at the .01 level ($F = 3.12$, $df = 5/135$). The respective means for the six trials were 4.60, 3.97, 4.17, 3.53, and 3.20. As one would expect, the interaction of Conditions and Trials was also significant at the .05 level ($F = 1.99$, $df = 10/135$). According to this interaction, the shock intensities set by the *Ss* in the Participation and Attack Observation conditions tended to decrease in a relatively similar manner as a function of trials. The mean shock intensities set by the *Ss* in the Participation condition were 5.9, 4.7, 5.7, 4.1, 3.6, and 3.7, while the mean shock intensities set by the *Ss* in the Attack-Observation condition

were 6.0, 5.5, 4.6, 4.3, 4.5, and 3.7. On the other hand, the shock intensities set by the Ss in the No-Attack Observation group remained low throughout the six trials: 1.9, 1.7, 2.2, 2.2, 2.5, 2.2.

A separate analysis of variance was performed on the shock intensities set by the Ss in the participation and attack observation conditions. According to this analysis, only the Trials effects was significant ($F = 4.17$, $df = 5/90$, $p < .01$). Neither the main effect of Conditions nor the Condition \times Trials interaction was significant at the .05 level.

D. DISCUSSION

The results of study I demonstrate, quite convincingly, that an aggressive encounter of fairly short duration can have an effect on an S's subsequent aggressive behavior. Following each hostile altercation, the Ss in the Experimental group evidenced a greater tendency to initiate attacks against an unfamiliar opponent. Furthermore, the Ss in the Experimental group continued to aggress against the passive opponent.

What is responsible for the increased expression of aggression evidenced by the Ss in the Experimental group? One possibility, which can be discounted immediately, is that the Ss were influenced by the instructions, shock threshold procedure, or the return to the laboratory. The Ss in the Control group did not evidence an increase in physical aggression. Obviously, some aspect of the aggressive encounter affected the behavior of the experimental Ss.

During the experimental sessions, the Ss were actively engaged in the aggressive interaction. They responded to their opponent's repeated attacks by setting increasingly greater shock intensities. Thus, while participating in the competitive task, the Ss were practicing the aggressive response. It is possible that this "practice" was responsible for the increase in shock setting behavior evidenced by the experimental Ss. On many trials, the opponent suffered injury as a consequence of the S's retaliatory behavior. Therefore, given the traditional assumption that pain or injury to a victim is a potent reinforcer of aggressive behavior, one could theorize that the Ss acquired their tendency to initiate attacks as a result of "reinforced practice."

Another possible interpretation of the results of Study I is that the information received by the Ss by way of the feedback lights, rather than the amount of shock administered or received, was responsible for the increased tendency to initiate attacks. During the first two sessions, the Ss received continuous information indicating that the opponent intended to

harm them. Given this experience, it is not unreasonable to assume that the Ss expected some degree of provocation to be forthcoming during the next session. It is possible, then, that the expression of aggression evidenced by the Experimental Ss was due to their attributing aggressive intent to their opponents. There is considerable evidence to the effect that aggressive behavior varies as a function of the degree to which a person attributes aggressive intent to his victim (e.g., 3, 4). Maselli and Altrochi (5) suggest that "the attribution of intent can have dramatic negative behavioral consequences" (p. 452). They note, it can "lead to degrees of aggressive behavior which vary from so little as to imperil one's existence to so much as to imperil everyone's existence" (p. 453).

This cognitive interpretation is supported by the results of Study II which had been designed to investigate the independent effects of the information communicated to the Ss concerning the aggressive intent of the opponent on the tendency to initiate attacks. The Ss in the Attack Observation condition received the same information via the feedback lights as the Ss in the Participation condition. However, they were not allowed to administer or receive electric shocks. It was observed, first of all, that the Ss who were not actively involved in the aggressive encounters did behave in an aggressive manner when given the opportunity to attack an opponent prior to receiving information concerning his aggressive intentions. These results provide support for the position that exposure to aggressive models is a potent antecedent of aggressive behavior. The more interesting results, however, concern the relative aggressiveness of the Ss in the Participation and Attack Observation conditions. Surprisingly, the Ss who simply observed the aggressive opponent were just as aggressive as the Ss who were behaviorally involved in the competitive task. There was no appreciable difference in the initial mean shock intensities set by the Ss in the Participation ($M = 5.9$) and Attack Observation ($M = 6.0$) conditions. Thus, it would appear that the repeated observation of unprovoked attack was sufficient for the increase in the tendency to initiate an aggressive act. Actual performance of the aggressive response was obviously not a necessary condition for the change in the observed behavior tendency.

The results of the second study also provide evidence for the assumption that the repeated exposure to the unprovoked attacks influenced the Ss' behavior by increasing their anticipation of becoming a recipient of an attack from a prospective opponent. It will be recalled that the Ss in the Observation condition were required to judge the intensity of electric shock they believed the opponent would set on each trial. According to these

judgments, 70% of the Ss in the Attack Observation condition increased their estimate of the opponent's first trial shock setting from the first to the second session. While 20% evidenced no change in their estimate, 10% of the Ss decreased their estimate. Thus, the Ss who received information indicating that the opponent intended to inflict pain on his competitor began to anticipate unprovoked attacks.

Finally, the possibility that the results can be attributed to the influence of "demand characteristics" must be considered. The *E* who conducted Study I was struck by what he subjectively believed to be considerable suspiciousness on the part of the Ss. The level of suspiciousness may have been increased because no confederate posed as the "opponent" in Study I. Ss in Study I may have dealt with their own suspicions by not expressing their doubts but by going along with the *E* and doing what they thought he wanted them to do. This rationale does not seem to be easily applied to the results of Study II. In Study II confederates posed as opponents, seemingly adding to the believability of the situation. The results of Study II correspond closely to those of Study I and therefore argue against the "demand characteristics" interpretation of the first experiment.

Numerous studies are currently being conducted in laboratories across the country in an attempt to increase our understanding of the dynamics of aggressive behavior. Many of these studies utilize paradigms in which Ss are involved in aggressive encounters. According to the results of this experiment the effects of an aggressive altercation in the laboratory are not necessarily transient. Apparently, by influencing a person's expectations concerning the aggressive intentions of others, the encounters can increase the probability that a person will initiate attacks against unfamiliar peers. It may be prudent, therefore, for researchers to determine whether such effects could generalize to extralaboratory situations. It is, of course, highly unlikely that such would be the case, given the relatively brief encounters experienced by the typical S.

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COGNITIVE COMPLEXITY, ATTITUDINAL AFFECT, AND DISPERSION IN AFFECT RATINGS FOR PRODUCTS*

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SUMMARY

The purpose of this study was to examine the relationships between cognitive complexity, attitudinal affect, and dispersion of affect scores ($N = 102$ male business administration undergraduates). Models of automobiles and toothpaste brands were the content domains studied. Analysis using Pearson product-moment correlation supported the hypothesis that cognitive complex Ss had a lower level of affect and greater dispersion of affect scores than did simpler Ss.

A. INTRODUCTION

To date, substantial research has been done in the area of interpersonal judgment and cognitive complexity. However, the influence of complexity on the evaluation of attitude objects outside of the interpersonal realm has received but limited attention. This is surprising, since there is no reason to expect that the concept of complexity is useful only in the explanation of interpersonal relationships (2, 4). Furthermore, extending research beyond the realm of interpersonal relations is necessary in order to understand more fully the impact that cognitive complexity has on information processing and attitude formation in other domains of interest.

The purpose of this research, therefore, was to investigate the relationship between cognitive complexity, attitudinal affect, and the variability or dispersion of affect ratings across various models of automobiles and brands of toothpaste. On the basis of recent previous research by Deaux and Farris (6) and the subsequent replication and extension by Hogan (8), it was hypothesized that a positive relationship would be found between complexity (higher complexity score means greater simplicity) and mean

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affect rating for both product categories. The basic rationale behind this hypothesis was the premise that cognitively simple Ss should tend to have a less critical perceptual set than more complex Ss.

Similarly, a hypothesis was that an inverse relationship should exist between complexity and dispersion of affect ratings. This hypothesis was based upon the premise that complex individuals distinguish more clearly among the brands of toothpaste and makes of automobiles than do less complex persons.

In the Deaux and Farris (6) and Hogan (8) studies, response extremity rather than dispersion of ratings was examined. It is quite possible that, while cognitive simplicity is correlated with rating extremity (+3 or -3 on a rating scale), cognitively complex Ss will stress more differences and hence have a greater dispersion or variation in responses while at the same time having a lower mean rating score than will more simple Ss. This is supported by previous research involving interpersonal complexity and judgments where complex Ss (a) produced impressions likely to include both favorable and unfavorable constructs (5), (b) appeared to stress differences between themselves and others (2), (c) produced ambivalent judgments after contradictory information was presented (11), (d) and distinguished more among conflicting stimuli than did less complex Ss (1).

B. METHOD

Ss were 102 male undergraduate business administration students at a large Midwestern state university who were paid to participate in the study. Three were subsequently dropped from the analysis because of a failure to complete the questionnaire properly.

Students were asked to fill out two Bieri Reptests (3), one pertaining to toothpaste and one to automobiles, and two sets of scales measuring affect towards toothpaste brands and automobile makes. A measure of affect similar to those in marketing attitude research studies (10, 12) to measure the A_o portion of the Fishbein attitude model (7) was utilized. Dispersion was operationalized as the variance of affect ratings within models of automobiles and within brands of toothpaste.

In the Reptests, toothpaste brand names or automobile models were used in place of role persons in the grid, and product attributes rather than personal constructs. Eight brand names and product attributes of toothpaste and 10 each for automobile models and attributes were selected for inclusion in the two Reptests. The attributes, brands, and models were selected on the basis of a free recall elicitation procedure (9) presented to a

sample of 73 male business students. This technique was used to assure that attributes and brands salient to the students and not those of the researcher were used in the study. Automobiles and toothpaste were selected for the study, since they are content domains which are different from interpersonal relations, have been extensively studied in marketing, and are familiar to students. The complexity scores were derived for automobiles and toothpaste via the matching procedure outlined in Bieri (3). In this procedure, the complexity scores were obtained by summing the number of instances where an *S* assigned identical numerical ratings across the respective bipolar attributes. The higher the score, the more simple was the *S* and vice versa.

C. RESULTS AND DISCUSSION

For both automobiles and toothpaste, the mean affect ratings across makes and brands, respectively, were significantly and positively correlated with cognitive complexity. In the case of automobiles, the Pearson product-moment correlation coefficient was .17 ($p < .05$), and for toothpaste brands it was .34 ($p < .001$). Furthermore, as postulated, an inverse relationship was found to exist between the variation or dispersion of affect ratings for each product category and cognitive complexity. The correlation coefficient for automobiles was $-.19$ ($p < .03$) and for toothpaste $-.33$ ($p < .001$).

These findings provide some support for the contention that the influence of cognitive complexity is generalizable, at least in part, beyond the interpersonal realm. It is interesting to note, however, that while the results were generally similar to those presented by Deaux and Farris (6) and to a lesser extent Hogan (2), the magnitude of the relationships between complexity and affect and the variability of the affect scores were somewhat smaller for product categories than were found for interpersonal relations (e. g., .27 to .80 for Deaux and Farris and .19 to .68 for Hogan). This may in part be due to the possibility that interpersonal relations are perceived to be more salient to *Ss* than are various products purchased in the marketplace. Consequently complexity may play a more important role in attitude formation process within the interpersonal domain.

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CONGRUENCE BETWEEN PERSONALITY AND JOB CHARACTERISTICS IN ALCOHOLICS AND NONALCOHOLICS*¹

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SUMMARY

Adult male alcoholics ($N = 75$) and nonalcoholics ($N = 75$) were compared on personality characteristics and on the relative match of their characteristics to their jobs. Results of the test battery and interview indicated better matching for nonalcoholics. No typical "alcoholic personality" emerged from the data. Finally, McClelland's hypothesis that alcoholics would have greater need for power was not confirmed. Instead, alcoholics were found to perceive themselves as having less power than nonalcoholics did.

A. INTRODUCTION

There is much truth in the witticism that nothing is work unless you would rather be doing something else. A major criterion for predicting occupational success and satisfaction has been the congruence between an individual's abilities, interests, values, and other personality characteristics, and the requirements of the job.

Therefore, as one aspect of a larger research project, comparisons have been made between alcoholics and nonalcoholics on personality characteristics and on the relative "fit" of their personality characteristics to their jobs.

The question of whether alcoholics differ from nonalcoholics in personal-

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ity characteristics has often been raised, but the empirical data do not yet provide a definitive answer (7). In planning this research, we assumed that there was no "alcoholic personality." We did hypothesize, however, that alcoholics would have poorly-defined self-concepts, and that their poor self-concepts might lead to inappropriate career choices.

B. METHOD

Initially, each *S* completed a series of self-report questionnaires on demographic information, work history, drinking behavior, and perception of power for each job he had held. *Ss* were then given a battery of tests, and, finally, an open-ended interview. The entire procedure took approximately six hours, and *Ss* were compensated for their cooperation by a \$25 honorarium and a specially prepared individual report on their test results. In selecting tests, the guiding criteria were that, where possible, they be standardized, relatively brief, objectively scored, and have norms for different occupational groups. In addition, measures of need for power and perceived power were included because of their apparent relevance to alcoholism, based upon the work of McClelland and his colleagues (4, 5).

This article focuses on the test results and the relative match between personality and job characteristics of the alcoholics and nonalcoholics.

1. Subjects

Seventy-five volunteers from organized alcoholism treatment programs were matched with 75 nonalcoholic control *Ss* who were also volunteers. All *Ss* were white males. Experimental and control pairs were matched on age (± 3 years), education (± 2 years), and marital status. The mean age of the experimental and control groups was 43 ($SD = 7.7$). The educational distribution of *Ss* ranged from completion of high school through the doctoral level. *Ss* were paired by occupational field according to the Roe scale (6). Their occupations, though not evenly distributed, ranged over a wide variety of fields.

2. Measures

The following attributes were measured in the indicated manner: (a) *Aptitude*: Wesman Personnel Classification Test, Form A, which yields sub-scores on verbal reasoning and numerical ability (8). (b) *Interests*: Strong-Campbell Interest Inventory, Form T 325 (2). (c) *Personality*: Sixteen Personality Factors Questionnaire, Form A (3). (d) *Work values*: Minnesota Importance Questionnaire which determines preferences for specific job-

related reinforcers (1). (e) *Need for power*. Four Thematic Apperception Test cards (4). (f) *Perception of power*. Responses to 21 items of the questionnaires which Ss completed for each job. These items, developed for this project and selected on the basis of reliability and discrimination between high and low perception of power, were in the form of self-ratings on a five-point, bipolar scale. Examples of these items are *gratified*, *frustrated*, and *worried about tomorrow*-*secure about tomorrow*. The mean for all jobs each S had held was used as the overall score. (g) *Congruence*. Difference between an S's score and the norm for each of his occupations on the Wesman, Strong-Campbell, Sixteen PF, and Minnesota Importance Questionnaire. In addition, a power-discrepancy measure was computed on the basis of the difference between each S's standardized need for power score and his mean standardized perception of power score.

C. RESULTS

Differences between the groups were significant on only two of the absolute test measures. Nonalcoholics scored as more intelligent on the personality test [$F(1, 147) = 37.23, p < .002$], and they perceived themselves as having had more power across jobs than alcoholics did [$F(1, 672) = 65.29, p < .002$].³

Among the congruence measures, there were three significant differences. Nonalcoholics were more closely matched to their occupations in interests [$F(1, 711) = 20.34, p < .002$]; and in work values [$F(1, 660) = 11.27, p < .002$]. There was also a larger discrepancy between need for power and perceived power among alcoholics [$F(1, 662) = 27.30, p < .002$].

D. DISCUSSION

In view of the fact that alcoholic subjects in this research were all volunteers from organized treatment programs, the results cannot be interpreted as necessarily applicable to alcoholics in general.

Since, however, the Ss did come entirely from such programs as Alcoholics Anonymous, it is especially interesting that no typical "alcoholic personality" emerged. Among professionals working in the area of alcoholism it is widely claimed that all alcoholics who go through formal rehabilitation programs such as Alcoholics Anonymous are molded into a

³ All probability levels are based on two-tailed tests. Degrees of freedom vary because the number of jobs Ss had held varied, and also because some of the stories written in response to the TAT cards could not be scored for need for power.

common type. Therefore, one would expect that both the amenability of the Ss to entering such programs and the effects of the programs might have enhanced any personality similarity among the alcoholic Ss. Yet, in spite of these influences, it was still not possible to differentiate the alcoholic from the nonalcoholic Ss on personality variables.

Other findings which have theoretical relevance are those with regard to need for power and perception of power. Since alcoholics and nonalcoholics were found not to differ in the need for power, it initially appeared that the results were contrary to McClelland's hypothesis that alcoholism is an expression of a frustrated need for power. When the perception of power was taken into account, however, a significant difference did emerge. The alcoholics, although they had the same need for power as the nonalcoholics, consistently perceived themselves as having had significantly less power than did the nonalcoholics. Although further documentation of these findings will be needed to substantiate this interpretation, it appears that McClelland's theory may need to be modified to indicate that the difference between alcoholics and nonalcoholics is not in need for power, but, rather, in perceived power.

Although the aptitudes and personality profiles of the alcoholics were as suitable as those of nonalcoholics for their jobs, discrepancies arose in the domains of interests and work values. In both areas, the alcoholics' characteristics were significantly less congruent with the job characteristics than were those of nonalcoholics. These results support the hypothesis that the alcoholics were indeed more likely to have been in jobs that were not congruent with their self-concepts.

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FACTOR-SPECIFIC DIMENSIONS IN PERSON
PERCEPTION FOR SAME- AND
OPPOSITE-SEX FRIENDSHIP
DYADS*

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SUMMARY

College students (43 male and 45 female) provided descriptions of themselves, their best same-sex friends, and their best opposite-sex friends, using the Subjective Estimation Blank derived from Cattell's 16 Personality Factor questionnaire. Results indicate substantial factor specificity in person perception. Males' self and male-friend descriptions emphasized leadership and rivalry dimensions. Females' self and female-friend descriptions indicated sensitivity to perceptions of social competency. Males tended to describe females in terms of sociosexual companionship, while females attended to males' probability of material success. Competitive relationships appeared to characterize same-sex evaluations for both males and females, while complementarity was the basis for other-sex evaluations.

A. INTRODUCTION

Brown (3) has proposed two broad classifications of dyadic interpersonal relations. In the first type, symmetrical, the nature of the interaction is defined by the degree to which solidarity is achieved through such factors as personal similarity, spatial proximity, pleasant sentiments, frequent and intimate exchange, and symbols of solidarity. Similarities, complementary differences, and perceived equality of status promote feelings of solidarity between individuals except in conditions where one individual can only gain at the expense of the other. In the second classification, asymmetrical relations, the nature of the interaction is related to values, sentiments, behaviors, and symbols involving status differences. Status differences

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exist to the degree that one partner is perceived as differing in socially valued characteristics and/or as exerting influence, power, or control over the other partner. Asymmetry in relations is also dependent upon the extent to which positive sentiments are experienced towards superiority and disagreeable sentiments are experienced towards superiority and disagreeable sentiments are experienced towards inferiority. Brown's model may be viewed as encompassing two conceptually independent factors: a dominance or ascendancy dimension (asymmetrical relations) and an equality dimension (symmetrical relations). Similar dimensions were identified by Wish, Deutsch, and Kaplan (10) among respondents' descriptions of several types of dyads.

Given this perspective, the current study investigated person perception within dyads, comparing those of same-sex and opposite-sex friends. From the classificatory scheme suggested by Brown (3), it was hypothesized that perceptions of same-sex and other-sex friends by males and females would differ in terms of central characteristics of interest to each.

Block (2) has demonstrated that traditional sex-role expectations promote "agency" (i. e., concern for individualistic competition) among males and "communion" (i. e., concern for selfless striving for group unity) among females. Such findings suggested the following hypotheses with regard to perception of same- and other-sex friends among males and females. Males were predicted to evaluate male friends principally with consideration of status differences, whereas females were predicted to evaluate female friends principally with consideration of solidarity and similarity. That is, if individuals value certain characteristics in themselves and such values are determined by sex-role expectations, it was expected that related sets of attributes would be central to the evaluation of friends of the same sex. Here, the individuals would not only achieve some degree of predictability for continued interaction with his or her same-sex friend but could also experience support of his or her own self-concept by perceived similarity. Bailey, Finney, and Helm (1) have demonstrated that support of the self-concept by a friend may be as, or more, important than similarity in friendships.

With respect to friends of the other sex, it was hypothesized that perceptions principally center around the friend's compliance with sex-role appropriate behavior. Thus, while the attributes of interest in an other-sex friend may be different from those of interest in self-evaluation, it is suggested that friendship here is founded on differences that are complementary in

nature. Thus, while males may evaluate themselves and their male friends with concern for attributes valued and associated with status order (for example, intelligence, dominance, ascendancy, and related leadership capacity), males may evaluate female friends on complementary attributes associated with solidarity (for example, social skills). Conversely, while females were expected to evaluate themselves and female friends primarily with concern for attributes associated with social skills, they were predicted to evaluate male friends on attributes associated with status.

B. METHOD

1. *Subjects*

A total of 88 students (43 males and 45 females) enrolled in various undergraduate psychology courses at a large urban university participated in the study.

2. *Materials*

Subjective Estimation Blank [SEB(6)] was selected as the assessment device. The SEB consists of 16 pairs of adjectives, one pair for each dimension of the 16PF (5). It provides a simple and rapid measure of the basic personality traits derived from Cattell's (4) original theory. The SEB has been shown to correlate extremely highly with the original 16PF and with canonical analysis disclosing 83% common variance in the measures (6). Thus, the SEB yields a measure of rated personality substantially congruent with the Cattell, Eber, and Tatsuoka (5) inventory.

3. *Procedure*

Each *S* was given three copies of the SEB with instructions to provide a self-description, a description of a best same-sex friend, and a description of a best opposite-sex friend, respectively. The data were then subjected to principal axis factor analyses with rotation to Varimax criterion (8). Factors with eigenvalues greater than 1.0 were retained for interpretation.

C. RESULTS AND DISCUSSION

In order to simplify presentation of results, factors are presented in order of emergence for each sex group. The names suggested by the emerging factors are given in each instance in italics and the proportion of variance accounted for appears in parentheses.

1. Ratings by Males

a. *Self* As predicted, the four factors which emerged from male respondents' descriptions of self generally reflected concern for leadership capacity. The first factor, *Social Assertiveness Versus Compliance* (33.9%), emphasized social assertiveness and participation at the positive pole, while a sense of accommodation and detached conservatism characterized the negative pole. The second factor for male self-ratings, *Critical Cognitive Ability* (32.2%), reflected attributes of imagination, intelligence, and suspicion. The third factor, *Neurotic Emotionality* (12.8%), emphasized tension, sensitivity, and apprehension, which were presented as polar opposites to relaxation, self-reliance, and self-assurance. The last male self-descriptive factor to reach criterion, *Independent Strength of Will* (12.4%), was characterized by the citation of willpower and resourcefulness.

b. *Same-sex friends*. Ratings by males of male friends provided five factors which reached criterion. Again, predictions were generally supported. The first factor here, *Dominance* (33.7%), emphasized the perception of the other male as possessing willpower, assertiveness, and social acuity, and clearly reflected ascendancy dimensions. The second male factor, *Critical Cognitive Flexibility* (22.8%), reflected imagination, abstraction, and suspicion. The third male factor, *Benign Submissive Companionship* (14.8%), embodied concepts such as happy-go-lucky, a "joiner," and apprehensive. This factor appears to be conceptually similar to Brown's (3) nonthreatening equal interaction and Block's (2) description of "communion." The fourth factor, *Behavioral Extraversion* (11.6%), showed substantial loadings for venturesome, outgoing, and experimenting. The final male factor, *Defensive Arousal* (9.7%), showed notable contributions from tension, emotionality, and apprehension.

c. *Opposite-sex friends*. Males' ratings of best female friends yielded four distinct factors. The first factor, by far the most important by virtue of its accounting for almost half (46.4%) of the variance, emphasized strong loadings for females as experimenting, imaginative, abstract, relaxed, happy-go-lucky, expedient, and venturesome. The popular stereotype of the bright, fun-loving female suggested *Carefree Creativity* as a reasonable label for this dimension. Thus, while traits related to intellectual abilities are considered by males in female friends, it should be noted that these are found in the context of nonthreatening companionship. The second factor, *Social Presence* (19.2%), was characterized by signal loadings of self-reliance, venturesomeness, assertiveness, willpower, and extraversion. The third factor of males' perceptions of female friends, *Anxiety* (14.8%), em-

phasized tension, apprehension, suspicion, and social clumsiness. The final factor, *Social Competence* (11.8%) was substantially saturated on emotional stability and social skill.

2. Ratings by Females

a. *Self*. As predicted, self-descriptions by females showed a radically different pattern than those of males, and principal concern for social skill was evidenced. Nearly half of the variance (45.4%) was bound by such adjectives as outgoing, venturesome, assertive, and socially astute. The first female factor clearly reflected *Social Extraversion*, and the adjectives showed clear compatibility with values characteristic of female role training (9). The second female factor, *Self-Confidence* (22.0%), reflected sensitivity and apprehension. The third female factor, *Creative Cognitive Activity* (13.0%), reflected cognitive concerns, including intelligence and creativity, coupled with a sense of drive tension. The final female factor, *Nontraditionalism* (11.2%), emphasized radical expediency, with self-sufficiency and critical resourcefulness.

b. *Same-sex friends*. Whereas female self-ratings tended to emphasize social extraversion, the dominant dimension for females' ratings of other females, *Low Self-Confidence* (31.7%), reflected attention to apprehensiveness, sensitivity, and a general lack of resourcefulness. The second female factor, *Noncompetitiveness* (22.8%), emphasized venturesomeness and a lax sense of being happy-go-lucky. It seemed to embody an evaluation of a sense of irresponsibility in other females. The third factor, *Noncooperative Distrust* (14.4%), showed strong contributions from assertiveness and suspicion. The final factor in the perception of female friends by females, *Social Skills* (13.3%), was characterized by a substantial loading on social adeptness, with contributions from outgoing and resourceful. Thus, females generally emphasized low leadership potential and social skills in perceptions of female friends.

c. *Opposite-sex friends*. The first factor for females' ratings of males accounted for 41.9% of the variance and showed substantial loadings for attributes of outgoing, venturesome, experimenting, abstract-thinking, assertive, and imaginative. This highly undifferentiated cluster of evaluative dimensions suggests that the primary core of a female's evaluation of a male is *Perceived Probability of Success*, since the factor generally demonstrates leadership capacities in line with the social stereotype of achievement among males (7). Subsequent factors emerged which clarify the bases for assessment. The second factor, *Social Influence* (18.3%), manifested an

overwhelming contribution from perceived willpower and lesser contributions from social adeptness and seriousness. Yet, this is a relatively minor dimension compared to the first. The third factor, *Suspicious Anxiety* (13.1%), emphasized tension, suspicion, and anxiety. The final factor, *Ego Strength* (10.6%), by which females rated males, emphasized emotional stability and self-reliance.

3. Conclusions

In sum, results generally support the hypothesized dimensions of evaluation. Quite different dimensions were found for males' and females' perceptions of themselves, their best male friends, and their best female friends. Males' self-perceptions generally reflected dimensions related to leadership capacity. Perceptions of same-sex male friends appeared to involve assessments of the likelihood of physical and cognitive rivalry and superiority, while perceptions of female friends by males were most strongly concerned with fun-loving companionship. Females' self-perceptions, by comparison, emphasized social activity. Female assessment of same-sex friends appeared to demonstrate concern for similar skills with first and second dimensions reciprocal to those of female self-descriptions: while a female is first concerned about herself as outgoing or withdrawn, she primarily evaluates another female as self-confident or emotional. While females assess themselves and their female friends on social adeptness, they assess their male friends on potential for leadership and related achievement skills.

Differentiating bases for friendships appeared with respect to same- and other-sex friends for males and females. Females' concerns for social skills and males' concerns for leadership and superiority in evaluation of themselves and same-sex friends provide support for a model of interpersonal attraction which emphasizes similarity, but one which also attends to effects of such similarity on status order. Evaluations of other-sex friends clearly substantiate the importance of complementary attributes in such relationships.

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PERSONALITY CHARACTERISTICS OF AMERICAN GUN-OWNERS*

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SUMMARY

The purposes of the present study were to explore the reasons behind gun ownership and to gather evidence concerning popular stereotypes of gun owners. Male gun-owners ($n = 37$) and a matched sample of nongun-owners ($n = 23$) reported demographic information, reasons for gun ownership, knowledge about guns, and experience with firearms. They also completed several personality inventories. Results indicated that gun-owners differed greatly from nongun-owners in their knowledge and interest in firearms. It appeared that early socialization to guns was a primary factor in firearm ownership. While gun-owners stated that recreation and defense were the primary reasons for owning guns, they also had personalities which were characterized by lower sociability and higher need for power than the nongun-owners. The gun-owners on the average did not exhibit atypical personality characteristics when compared with the nongun-owners or with national norms on the California Psychological Inventory. However, the small sample and the high educational level of gun owners in this study indicate caution when generalizing these findings.

A. INTRODUCTION

It is estimated that Americans currently own over 90 million firearms (10). The large number of firearms in the United States has led to a variety of explanations for their popularity. The most celebrated explanation has come from the psychoanalytic tradition in which guns are seen as phallic symbols which represent masculine power. A related explanation emphasizes the feelings of power and virility that a gun bestows on its owner (12). This power theme (16) is prevalent in the hunting literature and

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reflects the idea that a gun asserts a person's strength and invulnerability. Another explanation of gun ownership is fear based on criminal activity (5) or on psychological insecurity (2, 4). Additional explanations emphasize a desire for precision and mastery during hunting and a desire to be close to nature (4, 13). Some authors have theorized about the abnormal character and motivations of gun-owners (11), while others consider the gun-owner to be an ideal type.

Despite these various explanations of gun ownership, empirical evidence about the motivations and personality characteristics of gun-owners is almost nonexistent. However, demographic information about gun-owners has been collected in national surveys. A 1966 Gallup poll found 47 percent of a national sample reporting that there was a gun in the household; 80 percent of those admitting gun ownership said there was at least one hunter in the house. Wright and Marston (17) made use of data collected in The National Opinion Research Center's 1973 national survey in order to describe the demographic characteristics of gun-owners. They also found 47 percent of the households claiming gun ownership. Wright and Marston found that gun ownership was highest among Southerners, rural, and small town inhabitants, Protestants, and high income and high occupational status groups. Clearly these findings do not support the stereotype that gun-owners are predominantly working class people in large cities who arm themselves for protection in neighborhoods which are becoming integrated. In fact, persons living in integrated urban areas are less likely to own a firearm than those living in all-white areas. Also, those who were recently threatened by force were *less* likely to own a gun.

The present study was intended to complement the findings of Wright and Marston by studying the personalities of gun-owners. A variety of personality measures chosen on the basis of past explanations for gun ownership and on the basis of stereotypes about gun-owners were administered to a sample of gun-owners and to a matched sample of nongun-owners. McClelland's system (8, 9) for assessing need for power as measured by the Thematic Apperception Test was used to examine the power motive explanation of gun ownership. The F Scale (1) measure of authoritarianism was used to examine the stereotype of the gun-owner as very conservative and rigid in attitudes. The California Psychological Inventory (6) was used to examine various psychological characteristics that are mentioned in descriptions of gun-owners (e. g., dominance, sociability, conformity, and masculinity).

In addition to studying the personalities of gun-owners, a questionnaire designed for this study assessed early life experiences with guns, reasons for gun ownership, knowledge and interest in guns, and other characteristics of gun-owners (e.g., criminal history, heavy drinking) which might be particularly alarming in combination with gun ownership.

B. METHOD

Male gun-owners were recruited through a newspaper advertisement in Champaign-Urbana newspapers and through signs at local gun clubs, target ranges, and stores selling firearms. Ss were promised \$7.00 for participation in a 2½ hour study and were guaranteed total anonymity in responding. The gun-owners' names and addresses were requested but could not be connected with responses. On the basis of the addresses of the gun-owners, a matched group of nongun-owners was selected. Persons living in the same block as each gun-owner were approached until one person in the block agreed to participate. About one-third of this sample also were gun-owners; therefore, the final sample contained 37 gun-owners and 23 nongun-owners. The Thematic Apperception Test (TAT), the F Scale, the California Psychological Inventory (CPI), and a questionnaire designed for this study were administered to all Ss.

C. RESULTS

The two groups, matched initially for socioeconomic status by living area, did not differ significantly in occupational level, amount of education, or age. A chi-square analysis compared the gun-owners and the nongun-owners over seven occupational categories (e. g., skilled laborer, farmer), and the result was not significant, $\chi^2(6) = 4.62$. The number of years of education was 14.3 for the gun-owners and 14.6 for the nongun-owners, $t(58) = .31$. There was some difference in the mean age of owners (29.7 years) and nonowners (35.8 years), but this difference was not statistically significant, $t(58) = 1.52$.

Most of the gun-owners were actively involved with firearms. For example, 62% handled their guns several times a month or more. About one half (49%) of the gun-owners had completed a firearms safety course. The median number of *handguns* possessed by each gun-owner was one, with a range from zero to 15. The median number of *long-guns* (rifles or shotguns) possessed by owners was two, with a range from zero to 23. The total number of guns possessed ranged from 1 to 38.

1. *Socialization to Guns*

A major difference between gun-owners and nonowners was that the former group had been in a variety of situations which provided contact with guns. Gun-owners were more likely to have grown up in rural areas or small towns (73%) compared to nonowners who were more likely to have grown up in big cities or suburbs (65%), $\chi^2(1) = 8.46, p < .01$. Eighty-six percent of the gun-owners' fathers owned guns, compared with only 30% for nonowners, $\chi^2(1) = 19.16, p < .01$, and 78% of the owners had themselves acquired a firearm prior to the age of 18. Forty-three percent of the owners as children had attended a summer camp which had shooting *versus* 22% of nonowners, $\chi^2(1) = 2.88$, n.s., and 57% of the owners had been in the military *versus* 22% of nonowners, $\chi^2(1) = 7.09, p < .01$. Additionally, the gun owners were more willing to buy their young children toy guns (92% agreed) than were the nonowners (52% agreed), $\chi^2(1) = 12.50, p < .01$.

2. *Reasons for Owning a Gun*

The gun-owners were asked why they owned firearms. Nine possible reasons were listed on the questionnaire. Recreation—that is, sport use and intrigue with guns as mechanical and historical instruments—was the most frequently cited reason for owning a gun. The percentages checking these items were as follows: target shooting, 81%; hunting, 70%; guns as interesting devices, 54%. After recreation, protection was the most important reason for owning a gun: protection of home, 46%; protection of self, 8%. The fact that recreational activity and protection of the home are the major motivations for gun ownership in this sample is in accord with Wright and Marston's (17) finding that there is a hunter in 80% of firearm-owning homes. Reasons for owning a gun which were checked by none or only one respondent were, "to avoid violence with trouble-makers," "so others won't bother me," "in case of foreign invasion." Apparently the argument of the National Rifle Association (3) that private firearms are needed in case of foreign invasion is not a reason for gun possession among many firearm owners.

3. *Firearm Knowledge and Interest*

A total of 23 gun-related items were included in the questionnaire that was designed to tap knowledge, interest, experience, and use of firearms. The responses to the items were standardized with a mean of zero and a

standard deviation of one for the combined sample of 60 gun-owners and non gun-owners. A principal components analysis was performed on the standardized data. Five components were extracted which accounted for 76% of the variance, and a varimax rotation was employed to yield five orthogonal components.

Component I (51% of the variance) was interpreted as a knowledge component. Some items that loaded highly on this component were knowledge of the names of manufacturers of handguns (.73), knowledge of manufacturers of rifles (.79), knowledge of handgun calibers (.80), and knowledge of rifle calibers (.78). In addition, several interest items had moderate loadings on this component: for example, thinking about owning a gun (.44) and reading gun magazines (.41). High scores on this component indicate a high degree of knowledge about guns.

Component II (9% of the variance) was identified as a component reflecting inexperience and nonuse of firearms. Items on this component included frequency of shooting (−.66), shooting proficiency (−.66), earliest age that the person fired a gun (−.83), and earliest age that the person owned a gun (−.81). The age at which one first shot a gun and the age at which one first owned a gun loaded on this component with frequent gun use as an adult. High scores on this component indicate little experience with guns.

Component III (6% of the variance) reflected interest and use of guns. Items such as reading gun magazines (.70), thinking about owning a gun (.58), and looking at guns in a store (.43) loaded on this component. Also, frequency of shooting (.58) and frequency of handling weapons (.49) were included on this component. High scores on this component reflect high interest in guns.

Component IV (5% of the variance) and Component V (5% of the variance) were more specialized components. The fourth component had only two items with loadings more extreme than .3. These items were number of handguns owned (.89) and number of rifles and shotguns owned (.90). The fifth component also had only two items with large loadings. Both items referred to childhood experiences: playing with toy guns alone (.69) or with other children (.85). It is interesting to note from this component structure that the *number* of guns owned (Component IV) apparently is *not* highly related to knowledge (Component III) in guns.

Component scores for each participant on each of the knowledge and interest components were calculated. A discriminant analysis was performed in the attempt to differentiate gun-owners from non gun-owners on the basis of the knowledge and interest component scores. In this analysis,

Wilk's lambda was $\lambda = .28$. Rao's F -ratio approximation for testing the significance of the discriminant function was $F(5, 54) = 27.11, p < .01$, and Bartlett's V statistic for testing significance resulted in $\chi^2(5) = 69.69, p < .01$. According to the procedure outlined by Tatsuoka (14), 71% of the variability on the discriminant function is attributable to group differences. The group mean on the discriminant function for the gun-owners was .66; the group mean for the non gun-owners was -1.06 .

The standardized discriminant weights for each component were as follows: Component I, 4.3; Component II, -4.0 ; Component III, 2.4; Component IV, 1.5; and Component V, .6. According to Tatsuoka's (14) criterion for examining discriminant weights, the group with a high score on the discriminant function would tend to have high scores on Components I and III and a low score on Component II. Therefore, the gun-owners tended to have greater knowledge about guns, more experience with guns, and higher interest in guns than the non gun-owner group. Correlations of the component scores with scores on the discriminant function corroborated this interpretation, although the correlation with Component III did not attain significance.

The reason that Component IV, number of guns owned, did not significantly differentiate the two groups is that many owners possessed only one or two firearms; thus, the difference in means between the two groups was small and did not contribute significantly to group differentiation when considered in combination with the other components. The discriminant function on the knowledge and interest component scores was used to predict the group membership of each participant. Thirty-five of 37 gun-owners and 21 of 23 non gun-owners were correctly classified by the discriminant function (93% correct classification overall).

4. *Personality Differences*

A total of 45 personality measures and behavioral questions were included in this study. These items were standardized for the combined sample of gun-owners and non gun-owners and were subjected to a principal components analysis. Six components were extracted which accounted for 57% of the variance, and a varimax rotation was employed to yield six orthogonal components.

Component I (20% of the variance) was labelled Open-Mindedness/Intelligence. Examples of items loading highly on this component were the F-Scale ($-.66$), the CPI Tolerance Scale (.80), the CPI Intellectual Efficiency Scale (.81), the CPI Flexibility Scale (.60), and the CPI

Achievement via Independence Scale (.78). A high score on this component identifies a person who is intellectually able, self-reliant, and tolerant.

Component II (13% of the variance) was labelled Socialization. The important items on this component were frequency of intoxication (-.68), CPI Responsibility Scale (.58), CPI Socialization Scale (.65), CPI Good Impression Scale (.49), and CPI Achievement via Conformance Scale (.47). A high score on this component identifies a person who is industrious, conforming, dependable, and concerned with making a good impression.

Component III (7% of the variance) was labelled Self-Control and included items such as acting on the spur of the moment (-.66), staying up all night (-.63), driving long distances for no reason (-.67), not showing up for work (-.52), and the CPI Self-Control Scale (.60). High scores on this component identify persons who are self-denying, inhibited, and not impulsive.

Component IV (6% of the variance) was labelled Need for Power. The TAT measures of need for power (.93), need for personal power (.83), and need for social power (.84) were included on this component. High component scores indicate high need for power.

Component V (6% of the variance) was labelled Affiliation Concern for Others and was comprised of such items as ability to express anger (-.41), yelling at others (-.49), throwing things (-.44), destroying objects (-.49), CPI Femininity Scale (.45), and TAT need for affiliation (.48). High component scores identify persons who are gentle, sympathetic, and accepting of others.

Component VI (5% of the variance) was labelled Sociability and included items such as the CPI Self-Acceptance Scale (.57), frequency of gambling at cards (.60), CPI Sociability (.44), and CPI Communality (.43). High component scores identify persons who are competitive, aggressive, outgoing, and self-confident.

A discriminant analysis was performed which attempted to differentiate gun-owners from non gun-owners on the basis of component scores for each participant on each of the personality components. Wilks' lambda was $\lambda = .51$. Rao's F -ratio approximation for testing the significance of the discriminant function was $F(6, 53) = 4.46$ ($p < .01$), and Bartlett's V statistic resulted in $\chi^2(5) = 22.49$ ($p < .01$). Tatsuoka's W^2 multi showed that 31% of the variability on the discriminant function could be ascribed to group differences. The group mean on the discriminant function for the gun-owners was .45; the group mean for the non gun-owners was -.73.

The standardized discriminant weights for each component were as

follows Component I, 2.4; Component II, -1.6; Component III, 1.6; Component IV, 3.8; Component V, -4.4; and Component VI, -3.0. According to Tatsuoka's (14) criterion for examining discriminant weights, the group with the higher mean score on the discriminant function would tend to have high scores on Components I and IV and low scores on Components V and VI. Therefore, the gun-owners tended to be more open-minded and tended to have a higher need for power than the non gun-owners. On the other hand, the non gun-owners tended to be more affiliative and more sociable than the gun-owners. Correlations of the component scores with scores on the discriminant function fully supported these interpretations. The discriminant function on the personality component scores correctly predicted group membership for 31 of the 37 gun-owners and for 18 of the 23 non gun-owners (82% correct classification overall).

5. *Correlational Analysis*

The scores on the six personality components were correlated with the five knowledge and interest component scores across all 60 Ss, thus indicating the relationship of personality components to the entire range of gun interest, experience, and knowledge. For example, the need for power personality component (IV) correlated significantly and negatively with the gun inexperience and nonuse Component II, $r [58] = -.37, p < .01$. In addition, the openminded/intelligence personality component correlated with the gun knowledge Component (1), $r [58] = .42, p < .01$. These correlations confirm the general trends revealed by the discriminant analyses. Correlations of the components *within* each group revealed similar information. For example, within the gun-owner group, personality Component IV, need for power, correlated .49 ($df = 35, p < .01$) with knowledge and interest Component IV, number of guns owned.

6. *Comparison to National Norms*

In addition to comparison with the nonowners as a control, the gun-owners were compared with national norms which are available for the CPI (6). The average educational level of the gun-owners was about two years of college, and therefore this group was compared with Gough's college sample. The profile of the gun-owners was almost identical with the college norm group and higher than the high school norm sample on all CPI scales.

7. *Problem Gun Owners*

Beyond the average characteristics of the gun-owners, an additional matter of interest is the number of persons among the gun-owners who represent some threat to society. Because guns are far more lethal than other weapons (18), persons with violent criminal records and other antisocial problems may represent an increased concern to society when they possess a gun. Of the 37 gun-owners, seven had been arrested and three of these had been convicted. Two of the 23 nonowners had been arrested and one had been convicted. Unfortunately, most of those convicted and those arrested did not indicate the nature of their crimes; hence no firm conclusions can be drawn. The arrest and conviction rate was somewhat higher among gun-owners, although not significantly so.

Another group of concern is composed of persons who drink heavily and own guns, since research has shown that drinking is involved in a majority of homicides and in many assaults (7). There were seven gun-owners (19%) who reported that they became "drunk" several times a month or more. Only two of the 23 nonowners (9%) reported this frequency of intoxication. Because assaults and homicide are frequently committed by heavy drinkers (15), the finding that about one-fifth of the small city gun owners are frequently intoxicated is a matter of concern. Several of the gun owners with heavy drinking patterns also reported frequent impulsive behavior, such as berating other motorists in traffic. In addition, three of the gun-owners reported participation in "fist fights" during the last several years. One owner reported heavy drinking, physical fights, and impulsive behaviors. Another reported less frequent drinking (drunk several times a year), but physical fights and a high frequency of such impulsive behaviors as throwing things, yelling at others, and destroying household goods.

D. DISCUSSION

The conclusions of the present study rest partly on the success of the matching of gun-owner and nonowner samples. The matching procedure, based initially on the assumption that persons living in the same neighborhood would be matched for socioeconomic level, seemed successful in attaining groups that were similar in occupation, education, and age. At the same time, the discriminant function on the gun-related items revealed that the two groups were quite different in terms of their knowledge, interest, experience, and use of guns.

1. *Reasons for Gun Ownership*

A major reason appeared to be that gun-owners have had early socialization experiences with guns. Since more gun-owners grew up in small towns or on farms, they would presumably have had more experience with guns, not only because there are a larger number of guns owned in these areas (17), but also because there are more open spaces where shooting can take place.

The self-reported reasons for firearm possession are congruent with Wright and Marston's (17) finding that a large number of gun-owning households have at least one hunter. The reasons reported in the present study for owning guns were weighted heavily toward recreational use. However, about half the gun-owners also cited protection of the home as one reason why they own a gun. One personality characteristic which may help explain gun ownership is the need for power, the desire to dominate and control objects and other people. The firearm has been called "the equalizer" because it imparts such power to the possessor that other factors of dominance become less important. In a recreational context, shooting may satisfy the need for power because of the control and precision involved, as well as the life-and-death power the hunter exercises over his prey. No evidence emerged that gun owners were more personally insecure than nonowners. This motivation for gun ownership should thus be viewed skeptically unless future evidence supports its validity. In addition, defense of country does not seem to be a major reason for firearm ownership according to the owners themselves.

2. *Personality Characteristics of Gun Owners*

There was no evidence in the present study that the *average* gun-owner exhibits atypical personality characteristics. The gun-owners did not differ appreciably from a normative sample of college students on the CPI subscales (6), nor did the gun-owners show an unusual profile compared with the nonowner matched sample. Since about one-half of the households in the U.S. contain a gun, it seems somewhat unrealistic to attribute severe abnormal characteristics to the average gun owner (unless one is willing to see considerable pathology in most people). The personality characteristics of gun-owners, coupled with their early experiences with guns, suggest that gun ownership in the present sample was determined more by early socialization to guns than by unusual personality needs. However, the lack of personality abnormalities in the present sample should be tempered by two warnings. First, the most abnormal gun-owners may have self-selected out

of the study, not desiring to be tested. Second, although gun owners in general appear to be adjusted and not more pathological than nonowners, a few individuals certainly present a potential for concern. Frequent intoxication, impulsive behavior, and physical fights combined with gun ownership seem to represent a very dangerous combination.

3. Limitations

Beyond the problem of self-selection in the gun-owner sample, a few additional limitations of the present study should caution against premature generalization of the findings. First, the gun-owners and the non gun-owners were sampled with slightly different recruitment techniques, possibly contributing to the differences between the two groups. Second, the sample sizes were not very large for either of the groups. Finally, the high educational level of the present sample of gun-owners may indicate that this sample is not representative of the entire spectrum of gun-owners. Despite these limitations, this study demonstrates that gun ownership *per se* is *not* indicative of unusual motivations or of deviant personality characteristics. On the contrary, early experience with guns, an interest in guns for recreational purposes, and perhaps a greater need for power seem to be major factors motivating gun ownership.

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THE EFFECTS OF POSITIVE AND NEGATIVE AROUSAL
UPON ATTITUDES, BELIEF ACCEPTANCE,
BEHAVIORAL INTENTION,
AND BEHAVIOR*¹

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SUMMARY

An experiment was performed to test the hypotheses that (a) there would be a curvilinear relationship between increased degrees of a negative communication and persuasion, while (b) there would be a positive and linear relationship between a positive communication and persuasion. Two-hundred forty college undergraduate Smokers and Nonsmokers of both sexes were given false physiological feedback in order to manipulate their perceptions of different types of arousal (positive, negative, and control) and varying degrees of arousal (low, moderate, high, and control). The results showed that perceptions of negative arousal were related to belief acceptance and attitudes, while positive arousal was related to behavioral intentions. The results also demonstrated support for Fishbein and Ajzen's theory: beliefs predicted attitudes, while attitudes predicted intentions. However, subjective norms also predicted attitudes, and both attitudes and intentions predicted behaviors. The results not only demonstrate the importance of distinguishing between beliefs, attitudes, intentions, and behaviors when assessing the effects of persuasive communications, but also the importance of distinguishing between communications differing in type of emotional impact (positive or negative).

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A. INTRODUCTION

Several attempts have been made to integrate the findings in the fear appeal literature (11, 12, 13, 20). The consistent interpretation is a non-monotonic relationship between degree of fear and subsequent persuasion, in that low to moderate levels of fear should facilitate persuasion, while moderate to high levels inhibit it. In explaining why this curvilinear relationship should exist, McGuire (17) postulated that fear communications possess *drive* and *cue* properties, such that at lower levels of fear, the drive properties motivate avoidance of the threat and therefore reinforce persuasion, while the cue properties (e.g., defensive avoidance and aggression) inhibit persuasion when the fear becomes too intense. Thus, an intermediate level of fear becomes optimal for persuasion, as has been shown by several authors (15, 18).

In addressing serious methodological weaknesses in this area of research, several authors (6, 11, 15) have stated that fear appeals typically differ along more than one dimension, resulting in a confound between level of fear and a variety of other message factors (e.g., credibility, inherent persuasiveness, interest, etc.) making it impossible to attribute persuasive effects solely to fear. In addition, Fishbein and Ajzen (6) state that the persuasive effects of the fear-arousing communications have not been properly assessed by the dependent measures used in these experiments and advocate that task-relevant measures of belief acceptance are needed in addition to the traditional measures of attitude, behavioral intention, and behavior. Therefore, researchers must be attentive to these methodological issues and, as Beck and Davis (2) have mentioned, be responsive to how adequately they have sampled from the fear-arousal continuum, inasmuch as the nonrepresentative manipulation of fear can bias the interpretation of one's results.

Fear, because of its negative drive properties, motivates avoidance responses of the threat object and therefore facilitates persuasion when the drive is reduced (10). However, induction of a positive drive which motivates approach responses toward some object should also facilitate persuasion. Until recently this obvious question has been ignored, but the few results that are available indicate that persuasive communications which induce a state of positive arousal can elicit as much, if not more, attitude change and behavioral compliance than a comparable degree of fear-arousal. Evans *et al.* (5) compared the effects of high and moderate fear appeals with a positive arousing appeal. Their results indicated that although the fear appeal groups reported greater behavioral intentions than

the positive appeal group, and the high fear group demonstrated the highest amount of reported behavioral compliance, the positive appeal group showed the greatest amount of actual behavioral compliance. Several other investigators have also shown a facilitative persuasion effect through the use of positive arousal manipulations (4, 7, 14). Thus, positive emotional arousal is an effective motivational technique for compliance in a persuasive communication and, furthermore, the defensive and avoidance cues which inhibit persuasion under conditions of negative arousal should not exist with increased degrees of positive arousal. Therefore, the relationship between increased degrees of a positive arousing communication and persuasion should be positive and linear, while there should be a curvilinear relationship between increased degrees of a negative arousing communication and persuasion.

The present experiment attempted to test these predictions while maintaining attention to the various conceptual and methodological concerns outlined above. Since its main concern was to compare the persuasive effectiveness of varying degrees of different types of emotionally arousing communications, it was necessary to manipulate the perception of (a) increased *degree* of arousal as well (b) the affective label or *type* of arousal attributed to the varying degrees of arousal. However, in order to avoid the previously mentioned confound between the arousal state and various message factors, a constant persuasive communication (dealing with smoking) was used in conjunction with false physiological feedback designed to influence the recipients' perceptions of their own arousal state. The technique of false physiological feedback was chosen because previous investigations have shown it capable of manipulating both pleasant (8, 9, 21, 22) and unpleasant (10, 15) affective reactions. In addition, measures of belief acceptance, attitudes, intentions, and actual behavior were employed to assess the persuasive effectiveness of the various arousal states while in conjunction with the message, allowing the results to generalize across a wide variety of compliance responses.

B. METHOD

1. *Subject*

A sample of 240 (120 Smokers and 120 Nonsmokers) college undergraduates was randomly selected from a pretested sample of Introductory Psychology students who had volunteered to attend a pretesting session in order to fulfill part of the required four hours participation as experimental Ss in psychology. Seven of these Ss expressed suspicions about the validity

of the false physiological feedback, and their data were not included in any of the data analyses.

2. Apparatus

The equipment, from the *Ss*' perspective, consisted of a slide projector, a table upon which rested a voltmeter, a set of EKG electrodes, and a set of headphones. A stereo tape recorder and an EKG machine were hidden from view. *Ss* heard either one of three bogus heart rate tapes differing only in their frequency of beats per minute, or no tape at all. The heart beat sounds were produced from a 70 Hz pulse tone. Each pulse was 75 milliseconds in duration, with a 200 millisecond pause between each pulse. The bogus heart rate for the Low Arousal condition started out at 66 BPM and increased, by between 2-4 BPM, until it reached its maximum of 90 BPM. The heart rate then decreased by between 2-4 BPM until its final rate of 80 BPM. The same patterns of increases and decreases were recorded for the Moderate Arousal condition except that the bogus heart rate reached a maximum of 114 BPM. The High Arousal condition started out at 75 BPM and reached a maximum of 140 BPM, and it also followed the same increase-decrease pattern as the other two arousal conditions. *Ss* in the Control Arousal condition did not hear any false heart rate feedback. The *Ss* were also confronted with a modified voltmeter, the face of which was divided symmetrically into six wedge-shaped pieces. The center two pieces, just left and right of the center line, were labelled "low." The next two pieces, adjacent to and on opposite sides of the center pieces, were labelled "moderate." The last two pieces, on opposite sides and farthest from the center line, were labelled "high." In addition to the wedge-shaped pieces, the label "unpleasant" was at the extreme left of the meter, while "pleasant" was at the extreme right of the meter. Increases in bogus heart rate frequency were synchronized with movements of the meter's needle. *Ss* in the Positive Affect condition were exposed to needle movements in the "pleasant" side of the meter; the extremity of the needle movements depended upon the particular arousal level condition. *Ss* in the Negative Affect condition were, likewise, exposed to needle movements in the "unpleasant" side of the meter. Finally, *Ss* in the Control Affect condition were not exposed to the meter at all. The meter readings were synchronized with the heart rate sounds and a series of photographic slides.

The photographic slides contained a series of statements linking cigarette smoking to adverse consequences, such as cancer, impaired lung cells, and death, as well as a series of statements linking the avoidance of smoking

with various positive consequences such as greater longevity, and increased physical health. Interspersed among these statements were picture slides illustrating the various points in the preceding statements.

3. Procedure

Upon arrival at the laboratory, the *S* was seated at a table and was given a series of instructions which described the experiment. The *S* was told that the *E* was interested in college students' emotional reactions to a series of slides and this necessitated measuring the *S*'s emotional responses. The *S*s were also informed that they would be able to monitor their own emotional reactions by means of the headphones and meter. For purposes of control, some received meter only or heart rate only feedback. In addition, *S*s who were in the Control Arousal and Control Affect condition did not receive any feedback. In actuality, the *S* monitored the false feedback prerecorded by the *E*. As they were being connected to the electrodes, which they thought were part of a polygraph, the *S*s were told that this was an extremely accurate, objective, and immediate measure of their emotional arousal. After the instructions ended, the *E* answered any questions the *S* may have and then left that portion of the room and entered the adjacent (unseen) portion where the stereo tape recorder and EKG machine were located. After a two minute rest period, the slide sequence, with accompanying feedback, commenced. At the end of the slide sequence (approximately five minutes), the *E* administered the post-experimental questionnaire. After completion of this questionnaire, the *S* was thoroughly debriefed.

4. Dependent Measures

During the course of the slide presentation, the *S*'s heart rate was recorded on a Lumiscribe EKG machine. Each *S* was given the following items, in the order noted, on the postexperimental questionnaire:² (a) a modified version of the Mood Adjective Check List (19), (b) a multiple choice test of comprehension, (c) belief acceptance measures of the message, (d) the Smoking Attitude Scale (1), (e) a series of semantic differential scales measuring the *S*'s attitude toward smoking, (f) a series of Likert scales measuring behavioral intention, (g) a series of semantic differential scales measuring the *S*'s perception of his family and friends' attitudes

² All measures not followed by a reference number are unpublished scales developed by the author and may be obtained upon request to the author at the address shown at the end of this article.

toward smoking, and (h) eight point Guttman scales measuring the S's perception of the degree to which his family and friends smoked. Finally, Ss were telephoned approximately one week after they had served in the experiment and responded to a number of questions concerning their actual behavior.

5. Design

Three independent variables—Arousal Level, Affect Label, and Usage—were employed in a $4 \times 3 \times 2$ between Ss factorial design for the initial portion of the data analyses. The Arousal Level factor consisted of four levels (high, moderate, low, and a no heart rate feedback control). The Affect Label factor consisted of three levels (positive, negative, and a no meter feedback control). The Usage factor consisted of Smokers and Nonsmokers.

C. RESULTS

1. Arousal Manipulation Check

Several types of arousal scores were derived from the Mood Adjective Check List (19) to determine if the Ss' perceptions of various types and degrees of arousal had been manipulated successfully. A negative arousal score was derived by summing the scores from the unpleasant adjectives (e.g., "clutched up," "fearful," "tense," etc.), while a positive arousal score was derived from the pleasant adjectives (e.g., "careful," "good," "cheerful," etc.). Two additional seven point items measured type of arousal and degree of arousal experienced. The first three scores assessed the manipulation of *type* of arousal, whereas the final score determined if *degree* of arousal had been successfully manipulated.

The results of these analyses revealed that the meter feedback was effective in manipulating the perception of different types of arousal. For each of the first three arousal scores, a main effect for the Affect Label factor was detected [negative $F(2,209) = 3.80, p < .05$; positive, $F(2,209) = 4.91, p < .01$; type of arousal, $F(2,209) = 11.16, p < .01$]. This was produced by the Positive Affect group, who reported greater perceptions of positive arousal (and less negative arousal) than the Negative or Control Affect groups who did not differ significantly. Also, Nonsmokers reported more positive feelings than Smokers [$F(1,209) = 4.07, p < .05$]. The final analysis, in which the degree of arousal score was used, revealed a significant Arousal Level by Affect Label interaction [$F(6,209) = 3.31, p < .01$] and a significant Affect Label by Usage interaction [$F(2,209) = 4.36, p$

05. The Arousal Level by Affect Label interaction was primarily produced by the High Arousal-Negative Affect group which reported the greatest degree of arousal of all groups. The results of the analyses of the Affect Label by Usage interaction revealed that for the Nonsmokers, the Negative Affect group reported greater arousal than the Control Affect group who reported greater arousal than the Positive Affect group. In addition, Smokers were more aroused than Nonsmokers only in the Positive Affect condition. The final analyses performed were upon the *S*'s actual heart rate. The results showed no significant differences across the experimental conditions.

The results of these analyses revealed that different types of arousal were successfully manipulated by the meter feedback, but in conjunction with increased bogus heart rate, it was not totally effective in manipulating increased degrees of arousal. Thus, in order to determine the precise relationships between different emotional states and the various indices of persuasion, a series of multiple regression analyses were performed in which the *S*'s self-reported arousal scores were treated as predictor variables for each of the separate persuasion criteria. The multiple regression approach was chosen because of its greater power and generality over analysis of variance techniques (3).

2. Multiple Regression Analyses

The first regression analysis employed the *S*'s Smoking Attitude Scale (1) as the criterion variable. The predictor set was comprised of the *S*'s four self-report arousal scores, two measures of comprehension (recall and recognition of the slide content), attitude toward the topic of smoking (semantic differential score), belief acceptance, behavioral intention, and the remaining four measures of the *S*'s perception of his family and friends' attitudes toward and actual frequency of smoking behavior. For all regression analyses the predictor set included the same variables except for the previous criterion variable which was restored for the next analysis. The results of this analysis revealed that the predictor set accounted for 50% of the criterion variance [$F(13,219) = 16.81, p < .01$]. In addition, the semantic differential accounted for the highest portion of unpartialled, as well as unique, variance. The score which accounted for the next highest amount of criterion variance, both total and unique, was friends' usage, followed by belief acceptance. These results are presented in Table 1.

The second regression analysis employed the *S*'s semantic differential score as the criterion and retained the same predictor set as in the first

TABLE 1
ZERO-ORDER AND SEMIPARTIAL COEFFICIENTS FOR CRITERION VARIABLES WITH
SIGNIFICANT PREDICTORS OF UNIQUE VARIANCE

Predictor	<i>r</i>	<i>sr</i>
<i>Smoking Attitude Scale</i>		
Semantic differential	-.64	-.54**
Friends' usage	-.27	-.16*
Family attitude	-.06	.10*
Type of arousal	.13	.12*
Belief acceptance	-.21	.10*
<i>Semantic differential</i>		
Smoking Attitude Scale	-.64	-.47**
Belief acceptance	.50	.30**
Family attitude	.28	.15*
Behavioral intention	.29	.13*
<i>Belief acceptance</i>		
Semantic differential	.50	.40**
Comprehension	-.17	-.18**
Family attitude	.11	-.13*
Friends' attitude	.27	.12*
Negative arousal	-.15	-.12*
Smoking Attitude Scale	-.21	.12*
<i>Behavioral intention</i>		
Semantic differential	.29	.19**
Positive arousal	-.13	-.15*
Comprehension	.17	.13*

* $p < .05$.

** $p < .01$

analysis. The results revealed that the predictor set accounted for 62.5% of the criterion variance, $F(13,219) = 28.15$, $p < .01$. They also indicated that the best predictor of the semantic differential was the Smoking Attitude Scale, followed by belief acceptance. The remaining variables which accounted for a significant ($p < .05$) amount of unique variance were family attitudes and behavioral intention.

The results of the analysis in which the S's belief acceptance score was employed as the criterion revealed that the predictor set accounted for 34.5% of the variance, $F(13,219) = 8.89$, $p < .01$, and that the best predictor of belief acceptance was the semantic differential. The variable to account for the next highest portion of total variance was friends' attitudes, which also accounted for a significant portion of unique variance. The remaining variables to account for significant unique portions of criterion variance were family attitudes, Smoking Attitude Scale, comprehension, and the negative arousal score.

The analysis of behavioral intention revealed that the predictor set accounted for 16.6% of the variance, $F(13,219) = 3.37$, $p < .01$. The results also revealed that the semantic differential was the best predictor of intentions. Positive arousal and comprehension also accounted for a significant portion of unique criterion variance. The results of all these analyses are also presented in Table 1.

The behavioral measures in this experiment were the self-report responses the *Ss* gave over the phone to a series of questions asked by the *E*. These questions were, (a) "Did you discuss the effects of smoking with other people?" (b) "If yes, how many other people?" (c) "Did you urge other people to stop smoking?" (d) "If yes, how many other people?" (e) "Did you make a financial contribution to either the American Lung or American Cancer Societies?" and (f) "If so, how much (did you contribute)?" Two hundred one *Ss* were contacted by phone and responded to these questions. These questions were treated as separate criterion variables in a series of multiple regression analyses. The results revealed that the predictor set accounted for a significant portion of criterion variance for only three of these behavioral measures. The results of the analysis for question *a* revealed that the predictor set accounted for 16.30% of the criterion variance, $F(14,186) = 2.58$, $p < .01$, and that the only variable from the predictor set to account for a significant portion of unique variance ($p < .05$) was the *S*'s degree of arousal score (3.09%). The results of the analysis of question *c* revealed that the predictor set accounted for 16.0% of the criterion variance, $F(14,186) = 2.53$, $p < .01$, and that of the predictor variables, semantic differential (2.84%) and friends' attitudes (2.53%) were the only ones to account for a significant portion of unique criterion variance ($p < .05$). The results of the analysis of question *d* revealed that the predictor set accounted for only 12.13% of the criterion variance, $F(14,186) = 1.83$, $p < .05$, and that none of the variables of the predictor set accounted for a statistically significant portion of unique criterion variance.

Since a distinction was employed between Smokers and Nonsmokers in this investigation, it was deemed appropriate to determine the relationship between the various independent variables and self-reported behaviors unique to Smokers. To this end the Smokers were also asked the following questions over the phone: (a) "Did you cut down on the amount you smoke?" (b) "If yes, how much?" and (c) "Did you stop smoking altogether?" These questions were analyzed in the same fashion as the previous questions but two additional items were added to the predictor

set. They were "I intend to cut down on the amount I smoke" and "I intend to stop smoking altogether." The results of the series of regression analyses revealed that the predictor set accounted for a significant portion of criterion variance for the Smoker's first and third questions. The results of the analysis of the Smoker's first question revealed that the predictor set accounted for 28.6% of criterion variance, $F(15,90) = 2.40, p < .01$, and the only variable that accounted for a significant portion ($p < .05$) of unique variance was the Smoking Attitude Scale (4.88%). The results of the analysis of the third question revealed that the predictor set accounted for 41.3% of the criterion variance, $F(15,90) = 4.22, p < .01$, and that the only variable to account for a significant portion ($p < .01$) of unique criterion variance was intention to cut down on the amount they smoked (9.08%).

D. DISCUSSION

This experiment was concerned with the manipulation of various degrees and types of arousal by a procedure which was independent of the content of the communication. This was done in response to the methodological issues raised earlier regarding the confounding of various message factors and emotional state, prevalent in the fear appeal literature. In order to attribute persuasive effectiveness to a certain emotional state, one had to maintain a constant message while manipulating arousal by an independent process. The technique of false physiological feedback was chosen for this purpose because previous investigations have shown it capable of manipulating both pleasant and unpleasant affective reactions. In addition, a distinction was employed between several different kinds of persuasion criteria. This was done in response to Fishbein and Ajzen's conclusion that persuasive stimuli do not have the same effect upon beliefs, attitudes, intentions, and behaviors. Thus, in order to understand the full impact of various emotional states upon the persuasion process, these measures were used.

The results of the analyses of the arousal manipulation check revealed that the meter feedback was effective in weakening the negative reaction to the persuasive message. The "pleasant" and "unpleasant" meter feedback was accepted by the Ss exposed to it. The false heart beats worked with limited success in creating the perception of increased arousal. The heart rate feedback was most effective in manipulating perceived arousal within a negative context. That is, when the feedback provided by the meter was "unpleasant," increased heart rate feedback led to greater perceptions of

arousal. In addition, the results revealed that the Nonsmokers were generally more susceptible to the feedback procedures than were the Smokers, due probably to less experience in defending against emotional reactivity from a persuasive, antismoking communication.

The regression analyses revealed that attitudes toward smoking were predicted best by normative influence and belief acceptance, while attitude (semantic differential) best predicted behavioral intentions. Thus, both social influence and personal belief factors appear dominant in predicting attitudes toward smoking, and these attitudes are dominant in predicting intentions to act. These findings are very consistent with the Fishbein and Ajzen (6) model. However, the influence of subjective norms has been postulated by this model to function independently of attitudes in predicting behavioral intentions, and the results from this experiment did not support this relationship. Instead, the findings suggest that, in this sample of American undergraduates, a person's predisposition to respond is determined by the person's evaluation of the topic, which is influenced by how other relevant people think about it.

The various types of emotional states had different influences upon the different persuasion criteria. Negative arousal was significantly related to belief acceptance, whereas positive arousal was related to intentions. In addition, type of arousal (negative) was also related to the Smoking Attitude Scale (1), although this is probably due to the wording of this Thurstone scale (e.g., "Smoking is one of the greatest evils in the world"). Leventhal's (16) distinction between fear control and danger control could explain these findings by suggesting that negative arousal motivates belief acceptance, thereby reducing the negative impact and allowing one to control fear, whereas danger control (acting upon the threatening agent or intending to do so) would be influenced by positive affective processes which motivate approach responses to the threat object. Thus these findings suggest that a distinction between different affective states (positive and negative) has important ramifications concerning the various components of the persuasion process.

The results of the analyses of the behavioral measures for the entire sample revealed that the predictor set accounted for little of the criterion variance (multiple R^2 ranged from .12 to .16). This may have been due to the time interval between when the predictor and behavioral measures were taken (approximately one week). Also, general indices of the predictor variables were used to predict specific behaviors. However, the predictor set was much more successful in accounting for the Smokers' behavioral

responses. The Smoking Attitude Scale (1) was the only variable to account for a significant portion of unique variance for the "Did you cut down on the amount you smoke?" question, thus giving evidence of attitude-behavior consistency. Also, intention to cut down on the amount smoked was the only significant predictor of "Did you stop smoking altogether?" One would expect the Smoker's other intention measure to be the best predictor of this question. However, this finding may reflect the hierarchical nature of these two intention measures. Clearly, it is more of a commitment to say that "I'm going to stop smoking" than it is just to "cut down on the amount smoked." Thus, one might be less willing to proclaim a goal which is harder to achieve, like stop smoking altogether, for fear of being unsuccessful than to proclaim a goal which requires less effort, just cutting down.

In conclusion, the results of this experiment did not provide support for the hypotheses that negative arousal would be nonmonotonically related to persuasion, while positive arousal would be related in a positive and linear manner. However, negative arousal was related to belief acceptance, while positive arousal was related to intention. These results suggest that motivational differences between positive and negative arousal states are related to different cognitive processes (fear *versus* danger control). Support was provided for the Fishbein-Ajzen model and demonstrated the necessity for distinguishing between beliefs, attitudes, intentions, and behaviors when conducting persuasion research. Additionally, the results also suggest that subjective normative influences were related to belief acceptance and attitudes toward smoking in American college undergraduates. Finally, greater attention should be devoted to the motivational differences between states of positive and negative arousal.

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VISIBILITY OF THE VICTIM*

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SUMMARY

The purpose of the study was to see the difference between the visibility and invisibility of the victim, as it affects aggression, cheating, and rudeness. Three hypotheses were tested: individuals will be more aggressive, will cheat more, and will be more rude when the victim is invisible than when he is visible. The first two hypotheses were tested on 70 Laurentian University students under laboratory conditions, whereas the third hypothesis was tested on a road where 120 observations were made. All the hypotheses were confirmed.

A. INTRODUCTION

Milgram (1) showed that as the victim gets farther and farther away from the aggressor, it becomes easier for the aggressor to inflict pain. His main concern was to study the condition of obedience and to see the relationship between remoteness of the victim and obeying of a cruel order. He noted that it was difficult for the S to look at the victim and administer shock at the same time.

On the basis of everyday observations, we can say it is difficult to look at the victim and be cruel, to look at the target person and give negative evaluations, and to look into the eyes of a man and lie to him. The purpose of the present study is to show how visibility of the victim affects aggression, cheating, and rudeness. Three hypotheses were tested.

1. Individuals will be more aggressive when the victim is invisible than when the victim is visible.
2. Individuals will cheat more when the victim is invisible than when the victim is visible.
3. Individuals will be more rude when the victim is invisible than when the victim is visible.

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B. METHOD

1. *Subjects*

University students, 35 males and 35 females were used to test the first two hypotheses. They were divided into two groups, visible and invisible. The same Ss remained in visible or in invisible groups for both experiments, to test the hypotheses about aggression and cheating.

2. *Procedure*

Both experiments were done in the same laboratory. The experiment on aggression was done in the same way as that of Milgram. The Ss were told that the purpose was to see the effects of punishment on memory. They were selected to play the role of a teacher (aggressor) on the basis of a draw made earlier. They were then shown a shock generator apparatus. They had to take a mild degree of electric shock to see how it felt. It was explained to them how they could increase or decrease the level of electric shock that ranged from 120 to 280 volts. They were first to teach their victims (students) the names and important cities of 40 different countries and then to test their victims' memory. During the memory test the Ss gave the name of the city, and the victims had to give the name of the country. The Ss in both groups had to give an electric shock every time the victims made a mistake, but were free to choose the level of shock. The victims, confederates of the *E*, made a prearranged number of mistakes. In order to make the story believable, the victims made mistakes about less well-known cities and countries like Isbamad, Pakistan, rather than well-known cities and countries like London, England. The Ss and the victim were seated in two adjacent rooms with a one-way-vision window in-between, and they could communicate through the intercom. The victim could be made visible and invisible by the arrangement of lights. The sex of the victim and the aggressor was the same.

To test hypothesis 2, the Ss were made to believe that they were competing with a rival in the adjacent room in a solitaire game of cards. The one who completed the game first—that is, turned all the cards up—won the game. The cards were so arranged that the S could not win without cheating. The game was explained to the Ss and then they were given a deck of prearranged cards and asked not to shuffle. After explaining the game, the *E* left the room with the excuse that he would go and explain the game to another S waiting for his turn. The S was asked to inform the *E* when the game was over, either completed—that is, all the cards turned up—or incomplete. The S played to the point that he could

not go any further. The confederate went on fiddling with the cards. This experiment, like the previous one, was under two conditions: visibility and invisibility. The sex of the victim and the *S* was the same.

The third hypothesis was tested on a road, in front of traffic lights. The *Es* made 120 observations. They stopped in front of the traffic and stayed there even when the light turned green. They measured the rudeness of the driver in the car behind theirs by the time the driver took to honk; the sooner he honked, the ruder he was. An arbitrary point of 1000 was chosen as a zero point, 1 point was deducted for every second he took to honk. If a driver waited for 20 seconds before he honked, he got a score of 980 on rudeness. In the victim-visible condition, the drivers had removed the convertible car top; in the victim-invisible condition, the car top was on.

C. RESULTS AND DISCUSSION

For hypothesis 1 a two-way analysis of variance using level of shock as a dependent variable revealed a significant effect of invisibility of victim ($F = 5.28$, $df = 69$, $p < .02$).

For hypothesis 2 a χ^2 , using frequency of cheating as dependent variable, revealed a significant effect of invisibility of victim ($\chi^2 = 3.87$, $df = 1$, $p < .05$).

A *t* test was used to test the third hypothesis ($t = 2.46$, $df = 119$, $p < .02$) and the difference was significant.

All three hypotheses have been confirmed. That is, individuals were more aggressive, cheated more, and were ruder when the victim was invisible. Milgram (1) gives five reasons to show why individuals aggress more and more as the victim becomes more and more remote. The five reasons are emphatic cues, denial, and narrowing of the cognitive field, phenomenal unity of act, incipient group formation, and acquired behavioral disposition. All these five reasons relate to the invisibility of the victim.

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THE RELATION OF BLOOD PRESSURE LEVELS TO THE ASSIMILATION OF IMMIGRANTS AND INTOLERANCE OF AMBIGUITY*

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SUMMARY

The process of becoming assimilated into a new culture can be a very stressful experience. One of the manifest symptoms of stress is elevated blood pressure. Scores obtained by 50 immigrants on a composite index of assimilation were compared with their blood pressure levels to determine if those experiencing the greatest difficulty in adjusting to the new culture also had the highest blood pressure levels. The blood pressure/assimilation relationship was found to be curvilinear; the low assimilated had the highest blood pressure levels. This relation was not affected by age and general cardiovascular health. It was further assumed that those high on intolerance of ambiguity would experience the greatest difficulty in the assimilation process. This hypothesis was not validated, in fact it appears as though intolerance of ambiguity operated somewhat positively in the assimilation of immigrants.

A. INTRODUCTION

One of the most interesting features of modern medicine is the conceptual reunification of man and environment. This conceptualization views most disease states as the result of a disharmonious relationship between the sick person and his environment. Coronary heart disease, America's number one killer (19), has been a prime target for researchers utilizing this holistic model of health and illness. Underlying much of the research seeking etiological relationships between social and psychological factors and coronary heart disease is Selye's concept of stress. Stress, according to him, "... is the state manifested by a specific syndrome which consists of all non-specifically induced changes within a biologic system" (16, p. 54).

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The body reacts to stress by the production of the stress hormones, adrenaline and noradrenaline, a reaction which is adaptive up to a point. However, excessive stress may lead to a chemical imbalance and a breakdown in the hormonal-adaptation mechanism. One of the manifest symptoms of this syndrome is elevated blood pressure, a major precursor of strokes, myocardial infarctions, any many other cardiovascular ailments.

Although the physiological reactions to stress are relatively well known, its external "causes" are not always clear. Schar and his associates (14, p. 586) have noted the comparative lack of consensus on the referents of the stress concept, but they conclude, "Generally, it is assumed that conflicts, cleavages, and strains in the social structure and the individual personality structure are sources of chronic emotional stress." Our purpose here is to explore the assimilation of immigrants, a process assumed to be highly stressful, and the effects of the success or failure of that process on blood pressure levels. Furthermore, since stress is not always inherent in the situation itself, but is also a function of the personality attributes a person brings to it, the influence of intolerance of ambiguity on the basic blood pressure/assimilation relationship is also examined.

Many authors (3, 5, 10) have linked various life changes to increased risk of coronary heart disease. Surely few life changes are as total in scope as the twin processes of immigration and assimilation. Fairchild (7 p. 115), referring to assimilation, has stated, "And let no one imagine for a moment that this is a bland and placid experience! It involves an upheaval of the very depths of emotional personality." The immigrant may suffer the stresses of this emotional upheaval for many years as he strives to maintain equilibrium between his internal milieu, formed and nurtured elsewhere, as it collides with the alien external environment. Stonequist (17, p. 203), for instance, noted the high suicide rate among immigrants; Sanua (13, p. 291) noted their high morbidity rates; Frost (8, p. 801) talked of "alien's paranoia," a form of psychosis only cured by repatriation; and even going back many centuries, Hippocrates noted that a terrible perturbation always followed migration.

More up to date and in line with our present interests is the study conducted by Cruz-Coke and his colleagues. They found a statistically significant difference in blood pressure levels between a group of Easter Islanders who had emigrated to Chile and a genotypically matched group of Islanders who remained behind. Whereas blood pressure did not increase with age among those who remained on Easter Island, it rose rather dramatically among the immigrant group. They concluded that the ob-

served increases of blood pressure levels were "... directly influenced by migration, regardless of age" (4, p. 699). Scotch (15) also found cultural change to be significantly linked with hypertension among a group of Zulus who migrated from their rural villages to urban areas.

Tolerance of ambiguity has been defined by Chaplin as "the ability to withstand conflicting or complex situations without undue psychological stress" (2, p. 21). Conversely, Budner has defined *intolerance* of ambiguity as "... the tendency to perceive (i.e., interpret) ambiguous situations as sources of threat" (1, p. 29). Eisenstadt (6, p. 275) has stated that successful assimilation is largely a matter of resolving and tolerating ambiguities. Any ambiguity the immigrant may experience may not be inherent in the situation itself, but may merely be a function of different cultural coping patterns. It is the inability or refusal to cope with, or adapt to, the acceptable native approach to a given situation which will presumably result in varying degrees of stress—particularly if the immigrant's coping mechanisms are unacceptable to the norms of the host culture.

The research questions are, then, as follows: (a) Is assimilation inversely related to elevated blood pressure levels: i.e., the lower the assimilation the higher the blood pressure? (b) Is the blood pressure/assimilation relationship attenuated under conditions of low intolerance of ambiguity?

B. METHODS AND PROCEDURES

A nonprobability sample of 50 immigrants representing 17 different countries were interviewed in their homes. There were 26 men and 24 women ranging in age from 19 to 74. Blood pressure readings were taken—with the use of a standard mercury sphygmomanometer with the Velcro cuff attached to the respondent's left arm—at the beginning and at the end of each interview. The mean of these two readings was considered the respondent's "true" blood pressure for the purpose of this study. Although we are primarily interested in variation in blood pressure levels rather than in hypertension itself, hypertensive cases have been noted. We follow the suggestions of Harburg *et al.* (9) in defining borderline hypertension as either ≥ 140 mm Hg systolic, or ≥ 90 mm Hg diastolic.

Assimilation scores were based on a composite index consisting of attitudinal (a Likert-type scale), and behavioral (citizenship status and membership in ethnically oriented clubs or organizations) referents. The 12-item assimilation scale contains such statements as "I prefer the company of native Americans to that of my native countrymen," "I feel completely at home in America," and "I often feel conscious of my non-American back-

ground." Intolerance of Ambiguity was measured by the Martin and Westie Intolerance of Ambiguity Scale (12).

An index of various cardiovascular health served as a control variable. It consists of various hypertension-related factors such as obesity, family history of hypertension, diabetes, and the respondent's smoking, exercising, drinking, and dietary habits. Various other background facts were also obtained from each respondent.

C. RESULTS

The small sample size makes it necessary to limit the analysis to zero-order and first-order relationships: i.e., an examination of the basic blood pressure/assimilation relationship, and that relationship within categories of one control variable. Because of the nonprobability nature of the sample, the present study should be viewed as hypothesis-generating rather than hypothesis-testing. In order to take full advantage of variation within the interval level dependent variable, eta (E) is used as the measure of association. Eta squared indicates the proportion of the dependent variable that is accounted for by the independent variable. Gamma (G) is used within variables measured at the ordinal or nominal level.

Systolic blood pressure ranged from a low of 106 mm Hg to a high of 191 mm Hg, with a mean of 128.1. Diastolic blood pressure ranged from a low of 64 mm Hg to a high of 120 mm Hg, with a mean of 84.4. The mean blood pressure of the sample exceeds the USDHEW (20) national sample mean by 2.5 mm Hg systolic, and by 2.0 mm Hg diastolic for its mean age category (40.4 years).

Respondents were coded into low ($n = 17$), medium ($n = 17$), and high ($n = 16$) categories of assimilation. The zero-order associations between systolic blood pressure and assimilation, and between diastolic blood pressure and assimilation were $E = .27$ and $E = .36$, respectively. Forty-seven percent of those low on assimilation, 12% of the mediums, and 31% of the highly assimilated were found to be at least borderline hypertensive. The same curvilinear pattern was repeated when we examined the mean blood pressure readings of the three assimilation categories. On the systolic scale the means were 132.3, 125.2, and 126.8, respectively. On the diastolic scale they were 87.4, 82.2, and 83.6, respectively.

1. *Biological Control Variables: Age and Cardiovascular Health*

In order to guard against possible spurious relationships in social epidemiological studies, nonsocial variables known to be related to the

phenomenon under investigation were controlled. Age is one such variable since blood pressure is known to rise with age (20). Other blood pressure-related variables were combined into the index of general cardiovascular health to comprise a second nonsocial variable.

Respondents were placed into three age categories consisting of those between 18 and 34 years ($n = 13$), between 35 and 44 years ($n = 21$), and between 45 and 74 ($n = 19$). The zero-order correlations between systolic and diastolic blood pressure and age were $E = .44$ and $E = .48$, respectively, with blood pressure rising with age. The zero-order gamma coefficient for age and assimilation was $.24$.

The first-order relationships between systolic and diastolic blood pressure and assimilation within the three age categories were $E = .11$, $.42$, and $.38$, respectively, on the systolic scale, and $.26$, $.46$, and $.38$, respectively, on the diastolic scale. Comparing these findings to the original zero-orders of $.27$ and $.36$, we find the blood pressure/assimilation relationship was particularly strong in the 35-44 age category, while it was somewhat attenuated in the 18-34 age category. The same curvilinear pattern that was found in the basic blood pressure/assimilation relationship was found within each category.

On the basis of scores on the index of cardiovascular health, respondents were placed into three categories: "good" ($n = 19$), "fair" ($n = 19$), and "poor" ($n = 12$). The relationships between systolic and diastolic blood pressure and assimilation were $.20$ and $.24$, respectively, with the "poor" category of cardiovascular health evidencing the higher blood pressure.

The first-order relationships between systolic and diastolic blood pressure and assimilation within the three categories of cardiovascular health were $.49$, $.22$, and $.37$, respectively, on the systolic scale, and $.39$, $.35$, and $.31$, respectively, on the diastolic scale. Since these relationships are particularly strong in the "good" category of cardiovascular health, and since the age factor only slightly diluted the basic blood pressure/assimilation relationship among the younger respondents, our confidence that the basic relationship exists, independent of biophysiological factors, is increased.

2. *National Origin*

Many authors (17, 18) have stated that the ease or difficulty of assimilation depends to some extent on the degree to which their own culture resembles that of the host society. The sample is broken down into the following countries of origin—England ($n = 6$), W. Germany ($n = 6$), Hungary ($n = 6$), Poland ($n = 6$), Spain ($n = 5$), Italy ($n = 4$), Mexico ($n =$

3), Nicaragua ($n = 3$), Philippines ($n = 2$), India ($n = 2$)—and one each from Taiwan, Egypt, Kuwait, Palestine, France, Belgium, and Ireland.

In accordance with the above logic, respondents were recoded into European ($n = 36$) and non-European ($n = 14$) categories. The relationships between systolic and diastolic blood pressure and the two cultural categories were .07 and .06, respectively. The gamma coefficient for assimilation and cultural origin was a strong $-.54$, with non-Europeans being much less assimilated. The relationship between cultural origin and intolerance of ambiguity was a negligible .07.

3. *The Influence of Intolerance of Ambiguity on the Basic Blood Pressure/Assimilation Relationship*

Scores on the Martin and Westie Scale were coded into low, medium, and high. Scores of one to 13 ($n = 18$) were placed in the low category, 14 through 19 ($n = 19$) in the medium category, and 19 through 28 ($n = 13$) in the high category. The relationships between systolic and diastolic blood pressure and intolerance of ambiguity were .13 and .12, respectively. Mean blood pressure readings of the three categories—from low intolerant to high—were 133.6/88.1, 127.2/84.3, and 125.2/82.6. The zero-order gamma coefficient for assimilation and intolerance of ambiguity was .15.

The first-order relationships between systolic and diastolic blood pressure and assimilation within the low, medium, and high categories of intolerance of ambiguity were .50, .33, and .20, respectively, on the systolic scale, and .60, .54, and .44, respectively, on the diastolic scale. Eta is an asymmetrical statistic which, therefore, does not indicate the direction of the relationship. However, by looking at the direction of other computed statistics, and by computing the mean blood pressure reading within each category, the direction of the relationship can be ascertained. Within the low and medium categories of intolerance of ambiguity the blood pressure/assimilation relationship was inverse, while in the high category it was positive.

D. DISCUSSION

Although the blood pressure/assimilation relationship remained when age and cardiovascular health were controlled, the limited size and nonprobability nature of the sample suggests that these findings be viewed only as hypothesis-generating, and as guidelines for further study.

The study emerged with four seemingly anomalous findings: (a) the curvilinearity of the blood pressure/assimilation relationship; (b) the posi-

tive direction of that relationship under conditions of high intolerance of ambiguity, (c) the fact that mean blood pressure levels rose as intolerance of ambiguity fell, and (d) the positive correlation between assimilation and intolerance of ambiguity.

Although it was the low assimilated who manifested the highest mean blood pressure levels, it appears that overadaptation to a culture also engenders stress. Since the highly assimilated, by definition, are most like Americans in their behavioral and attitudinal patterns, it follows that they should experience less cultural conflict and normative confusion, hence they should experience less stress. It was reasoned that assimilation is a process of many years duration and, since blood pressure also tends to increase with age, the age factor may be distorting the relationship. However, when we controlled for age, the same curvilinear relationship persisted within the three age categories. A possible explanation is suggested by the work of Orth-Gomer (11) who has stated that ischemic heart disease patients often turn out to be overly concerned with the demands of social propriety. Perhaps the highly assimilated take great pains to affect native mannerisms, are excessively "other-directed," and anxiously evaluate themselves to determine if they are acceptable Americans. It is interesting to note that all five of the highly assimilated respondents who were found to be hypertensive answered "agree" or "strongly agree" to the statement, "A person is either a 100% American or he isn't," contained in the intolerance of ambiguity scale.

The same explanation may be valid for the finding that blood pressure rises with assimilation (positive relationship) within the high category of intolerance of ambiguity: i.e., the anxious overadaptation to the host culture. But how can the positive relationship ($G = .15$) between intolerance of ambiguity and assimilation be explained, and the fact that it is among the low intolerants that the highest blood pressure levels were found? Scotch's (15) study implied that it was those who were intolerant of ambiguity who found the adjustment most difficult, and Eisenstadt (6) explicitly stated that this was so. However, fundamental differences exist between those two samples and the present sample. Scotch's Zulus were a homogeneous group who had made what may have been a relatively minor rural to urban move. The company of other migrants presumably did not generate the same pressures to assimilate urban culture that would be generated for the lone migrant and many hoped to return eventually to their homeland. In other words, the company of other like-minded individuals generates a counterpressure to maintain traditional rural practices.

Under such cross-pressure, it is not difficult to agree that those most intolerant of ambiguity would experience the most stress.

Eisenstadt's study, as the title *The Process of Absorption of New Immigrants in Israel* makes clear, deals with the adjustment of new immigrants. The major problem facing the new immigrant is learning the cultural patterns of the new society, a purely cognitive operation for which a healthy tolerance of ambiguity would be an asset. Assimilation, on the other hand, is emotional as well as intellectual, involving the rejection of one set of psychological constructs and the acceptance of another. The present sample, conversely, is a heterogeneous group representing 17 different nationalities. There are no enclaves of first generation immigrants in Toledo to perpetuate old-country traditions. Interaction is primarily with native Americans, hence any antiassimilationist counterpressures would have to emanate from the immigrant himself. This suggests that some other variable should be examined to account for our findings. Since education is strongly and inversely related to both assimilation ($G = -.46$) and to intolerance of ambiguity ($G = -.56$), it seems to offer the best possibility.

Education ranged from a low of four years to a high of 20 years. We placed those having between four and 12 years of education ($n = 29$) into a "low ed." category, and those with between 13 and 20 years ($n = 21$) into a "high ed." category. The assimilation/intolerance of ambiguity relationships within these two categories of education were $G = .29$ and $G = -.22$, respectively. Since our coefficients have increased over the original .15, and since we have opposite signs, it appears that education had been acting as a suppressor variable masking the "true" strength of the relationship between assimilation and intolerance of ambiguity. Evidently, intolerance of ambiguity and low education, as essentially twin attributes, were helpful in the assimilation process among the present sample.

In summary, intolerance of ambiguity has rarely, if ever, been viewed as a positive attribute. We can agree that in the vast majority of instances that it is not. As Eisenstadt (6) suggested, it may well be a barrier for the immigrant, but it is suggested here that it may only be a barrier to the initial acculturation process, and may well be helpful in overcoming the more problematic barrier of assimilation. If an immigrant is to make some sort of harmonious adjustment to his new environment, thereby avoiding the pernicious stress-elevated blood pressure-cardiovascular disease progression, he must share, to some extent, the values, norms, practices, and conventions of the society of which he is now a part. Intolerance of ambiguity is helpful because, coupled with the desire for acceptance, it

forces the immigrant to "choose" between conformity to the old or to the new—a choice not necessary for those not accustomed to thinking in terms of either/or dichotomies.

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AGGRESSION AGAINST A REMORSEFUL WRONGDOER: THE EFFECTS OF SELF-BLAME AND CONCERN FOR THE VICTIM*

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SUMMARY

Fifty-two female *Ss* observed a confederate (*c*) steal money from them. When confronted with the theft, the *C* either expressed regret and guilt over having stolen the money or did not show regret or guilt. In half the cases the *C* also expressed sympathy with the *S* who had lost money, while in the remaining cases the *C* was unsympathetic. *Ss* were then permitted to aggress against the *C* by administering different intensities and durations of aversive noise. Less intense noise of shorter duration was given to the guilty than to the nonguilty *C*. Noise of less duration was given to the sympathetic than to the unsympathetic *C*. There were no differences in the intensities of noise administered to the sympathetic *versus* unsympathetic *C*. Guilt was a stronger factor than sympathy in reducing retaliatory aggression. The weaker effect of sympathy may have been due to the perception by the victim that such behavior was ingratiating and insincere.

A. INTRODUCTION

In a recent review of equity research (8) it has been suggested that one way in which a victim can restore equity to the harmdoer/victim relationship is to forgive an apologetic harmdoer. The harmdoer can react to his transgression by showing remorse and personal grief over what he has done to the victim; in exchange, the victim provides forgiveness. There are countless examples of wrongdoers employing this strategy to avoid the wrath of their victims. For example, we intuitively suspect that the convicted felon who shows grief over what he has done stands a better chance of drawing a light prison sentence or fine than does someone who shows little regret. Along these lines, there is evidence that in contacts between

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the police and juvenile offenders the demeanor of the offender, including the extent to which he shows remorse, may be an important factor in the officer's decision formally to arrest the offender or to let him off with a verbal reprimand (5).

While there have been a number of experimental studies of the socialization process describing how one learns to confess and show remorse following a transgression (e.g., 1, 3), there are relatively few studies explicitly testing the hypothesis that remorseful harmdoers will be sanctioned less severely than nonremorseful harmdoers (2, 4, 6). The Rumsey study is the one most relevant to the present research. He found that *Ss* who read an account of a hypothetical crime were more inclined to give a harsher sentence to a nonremorseful offender than to one who was described as showing remorse. Our study differs from Rumsey's in that we actually have looked at the components of verbal statements of remorse and their impact on retaliatory aggression from the victim.

One component of remorse is the verbalization of "... how much personal suffering and guilt (the wrongdoer) has endured as a consequence of his unjust treatment of the victim" (8, p. 163). The victim may be hesitant to impose additional punishment on the conscience-stricken wrongdoer. He may assume that the wrongdoer has suffered enough from his self-punishment and blame and, therefore, not merit more sanctioning. The inference may also be made by the victim that the self-blaming wrongdoer recognizes his evil ways, has repudiated them, and therefore is unlikely to repeat his transgression. In contrast, the person who fails to show self-blame and guilt but, rather, insists on shifting the blame to others, is more likely to be viewed as requiring additional punishment to be "taught a lesson." For these reasons, we predict that more retaliatory aggression will be directed toward a wrongdoer who does not display self-blame and guilt than towards someone who does display these feelings.

A second aspect of remorse is the extent to which the harmdoer shows concern or sympathy toward his victim. A wrongdoer who voices such concern about the suffering and misery he has brought to his victim may be perceived as less deserving of punishment because he appreciates the consequences of his act and, therefore, may be less likely to do it again. On the other hand, the wrongdoer who does not show sympathy is viewed as callous and unfeeling. Lack of concern may be evidence that the wrongdoer is trying to deny responsibility to himself and others for what he has done. This lack of concern is likely to be regarded as insulting to the victim because in essence it says to him that his injuries are insufficient for the

wrongdoer to trouble himself. Finally the act of showing concern and sympathy toward the victim may be regarded as a commodity which the penitent wrongdoer offers the victim in exchange for his forgiveness. Giving sympathy may in effect provide the victim with an exalted status as "sufferer or martyr" which he may not normally enjoy. To deny the wrongdoer forgiveness following the expression of sympathy may be seen by others as not living up to the tacitly agreed upon terms of the exchange. Thus, we predict that a wrongdoer who expresses concern over what has befallen his victim will be forgiven more and, therefore, less likely to be the recipient of counteraggression than the person who fails to show concern and sympathy.

B. METHOD

1. *Subjects*

Sixty female Ss were originally recruited. All were volunteers who took part in order to earn money. An effort was made to use only Ss who had not participated in other social psychological experiments to insure that they would be sufficiently "naive" not to see through the deception. During the debriefing it was discovered that five of the Ss either suspected that the other S was a C or were aware of the methodology of aggression experiments and understood that we were primarily interested in how much noise they administered to the C. Data for these Ss were, consequently, excluded from our analysis. An additional three Ss were also eliminated because they either failed to understand the instructions or did not use the apparatus properly. The remaining 52 Ss were randomly assigned to one of the four conditions making up the 2×2 factorial design, with 13 Ss participating in each condition.

2. *Apparatus*

In the first phase of the experiment S and C in her early twenties performed a cooperative task similar to one used in a number of other studies of cooperation (7). A cumulative counter showed the money earned by the S during the task. In addition, on the S's console was a toggle switch labeled "Take Money," and a panel light indicating when to cooperate. Both S and C had identical sets of apparatus, including headphones for hearing noise.

A box for administering noise was available to the S during the second phase. On this box were four switches labeled "Not So Loud," "Loud,"

"Very Loud," and "Extremely Loud." Above each switch was an indicator light that went on when the switch was operated. Another button was labeled "Duration of Noise" and had an indicator light opposite it. Tone intensity and duration responses were recorded on an event recorder and timer in a control room.

At the end of the experiment the *S* was given a manipulation check questionnaire asking her why she had volunteered for the study, why she thought the *C* had volunteered, and how she evaluated the *C*. One question probed whether or not the *S* had actually perceived the *C* stealing money from the *S*. On the last page were a number of questions which the *S* was told to fill out "in the event the other person took money." The questions serving as manipulation checks are (a) How badly do you think the other person felt about not performing the first phase of the experiment properly? (b) Do you think the other person felt sorry that you didn't get paid fully for your part in the experiment? (c) How sincere was the other person's regret about not performing the first phase properly? For each of these questions there was a seven-interval scale for indicating the degree of agreement with the question.

3. Procedure

The *S* was brought into the laboratory and seated in front of a television monitor and the panel containing the task apparatus. She was told that a second *S* would also be participating in an adjoining room. *E* explained that this second *S* would arrive in a minute and that the *S* would see her on the television. The *E* pointed out that the television was used so that he did not have to repeat the instructions to both *S*s and could finish the session more quickly. At this point the *E* left and was seen shortly thereafter on the television bringing the second *S*, the confederate, into the next room and seating her. This second *S* was the *C*. The *E* then began to explain the study which involved an interest in the performance of various types of cooperative tasks under conditions of stress. *S* and *C* were to each pull a Lindsley knob when their panel lights came on. If they pulled simultaneously or within .5 seconds of each other, both received 20 cents. Both *S* and *C* wore headphones, through which various intensities of "stressful" noise would be heard. At this point of giving the instructions, the *C* interrupted the *E* to ask about the extra switch on her panel labeled "Take Money." It was explained that putting the switch to the "Take" position would divert the money that the person in the next room had made from her counter to the *C*'s. The *E* emphasized that this switch was part of

another experiment and there had not been time to disconnect it. Both *S* and *C* were cautioned not to use it. Addressing his remarks to the *C*, the *E* indicated that the second phase of the experiment would require her to do a more complex task of working logic problems. The *S* in the next room would be responsible for administering noise over the *C*'s headphones following an incorrect solution. At this point *S*s were told to put on their headphones and begin working when the light went on. The *E* then left the room, and 30 seconds later the "work" light went on. After two minutes of working the *C* suddenly stopped working, looked around, and turned on the "Take Money" switch. At this time money began to be deducted from the *S*'s counter until nothing was left.

At the end of the five minute period the *E* entered the *C*'s room, exclaiming that she had disregarded his instructions and used the Take switch. The response to the *E*'s challenge varied in terms of the amount of guilt and self-blame she felt over having taken the money, as well as the degree of sympathy with the victim. Four different videotapes were made showing the different combinations of guilt and sympathy. In the guilt condition the *C* included the following remarks with her response: "I feel badly about it. It just makes me sick what I did. It just seemed like an easy way to make money." In the no-guilt condition she stated, "Well, I don't feel one way or another about it. It just seemed like an easy way to make money." After this exchange the conversation continued during which the *E* asked what was going to happen to the other girl since the *C* took her money. In the sympathy condition the *C* responds with, "I feel sorry that she won't get everything she earned. She probably could really use the money." In the no-sympathy condition she says, "Well, like you said, she's just not going to get paid."

After the *C* had explained her behavior, the *E* grudgingly gave a voucher for the total amount showing on her panel (\$4.00). He then explained the second part of the experiment which involved the *C* doing a list of problems with multiple choice answers. Once a problem was completed the *C* was to state verbally the answer so that the other *S* could hear it. The *E* went on to say that

The person in the next room will have an answer sheet. If you have given an incorrect answer she will have the option of administering some noise to you which will be heard over your headphones. She can choose any intensity of noise and leave it on as long or as short as she wishes. Once you have completed a problem, regardless of whether you have done it right or wrong, go on to the next problem. You should begin to solve the problems when the light goes on on your panel.

After the instructions the *E* left the *C*'s room and instructed the *S* in the use of the box for administering noise. She was told that she should check the other person's answers on her answer sheet. If a mistake was made, she had the option of giving noise as punishment. To give noise, she should select one of the four tone intensity switches on the box and put it on the "on" position so that the indicator light opposite it came on. Following this, she was told she could keep this tone intensity going by pressing the large button labeled "Duration of Noise." As long as this switch was depressed, the other *S* would receive the tone which had been selected. The *S* was given a demonstration of the apparatus by putting on the headphones while the *E* briefly turned on the second lowest tone intensity which was labeled "Loud."

After approximately two minutes the *C* began solving problems and reading off answers. In all, there were 30 questions, 20 of which the *C* solved incorrectly. The 20 incorrect questions were randomly distributed throughout the 30. The *C* spent 20 seconds on each question. Once the questions were completed the *E* entered the *C*'s room and excused her. He then came into the *S*'s room, gave her the manipulation check questionnaire to complete and then debriefed her. The *S* was paid \$4.00.

4. *Analysis of the Data*

The measures of aggression were the average tone intensity and the total number of seconds (duration) of noise delivered by each *S* to the *C*. For the measure of intensity, there were five intensities to choose from, including the option of giving no noise. The highest tone, labeled "Extremely Loud," was assigned the value of 5. The next lowest intensity, "Very Loud," had the value of 4, and so on, with "No Noise" given a value of 1. "Duration of aggression" was simply the total number of seconds of noise each *S* delivered to the *C*.

C. RESULTS

Looking first at the manipulation check questions, we find that the videotaped stimuli had the expected effect. That is, *S*s in the guilt condition perceived that the *C* felt worse about not performing the experiment properly than did *S*s in the no-guilt condition ($F = 10.76$, $df = 1/48$, $p < .01$). Likewise those in the sympathy condition indicated that the *C* felt worse about not performing properly than did *S*s exposed to the *C* who showed no concern ($F = 7.71$, $df = 1/48$, $p < .01$). The interaction term for this question was not statistically significant ($F = 1.59$, $df = 1/48$, $p < .20$).

With reference to the question of whether the *C* felt sorry that the *S* did not get paid the full amount that she earned, *Ss* in the guilt condition felt that the *C* was more sorrowful than did *Ss* in the no-guilt treatment ($F = 5.76$, $df = 1/48$, $p < .05$). The *C* who showed concern for her victim was regarded as more sorrowful than the *C* who showed no concern ($F = 6.55$, $df = 1/48$, $p < .05$). Once again the interaction term was not significant ($F < 1$).

The third question asked *Ss* to indicate how sincere the *C*'s regret was about not performing the first part of the experiment properly. Only the guilt/no-guilt main effect was statistically significant ($F = 7.39$, $df = 1/48$, $p < .01$), with *Ss* in the guilt condition regarding the *C* as more sincere than *Ss* in the no-guilt condition. Neither the sympathy main effect ($F = 3.09$, $df = 1/48$, $p > .05$) nor the interaction term was statistically significant.

Examining the effect of the various conditions on the intensity of noise delivered to the *C*, only the guilt/no-guilt treatments significantly affected this dependent variable. The average intensity when the *C* displayed guilt was 2.34 compared to 3.05 when there was no guilt ($F = 16.28$, $df = 1/48$, $p < .001$).

Both main effects significantly influenced the duration of noise administered to the *C*. Thus, in the guilt condition, *Ss* gave an average of 32.46 seconds of noise compared to 56.65 seconds in the no-guilt condition ($F = 5.24$, $df = 1/48$, $p < .05$). The *C* who displayed concern for his victim received an average of 32.77 seconds of noise *versus* 56.35 seconds for the unconcerned *C* ($F = 4.97$, $df = 1/48$, $p < .05$).

D. DISCUSSION

This study examined the consequences of a wrongdoer expressing guilt and sympathy with the victim on retaliatory aggression. It was found that a wrongdoer who displayed guilt and self-blame for stealing from the *S* received significantly less aggression as here operationally defined than a wrongdoer who did not express feelings of guilt. Likewise, showing sympathy with the *S*'s plight also served to reduce retaliatory aggression, although guilt was clearly a stronger factor than sympathy. The fact that guilt was a more significant determinant of the victim's aggression may have been due to the wrongdoer explicitly providing evidence that she had punished herself by her own guilty conscience over the transgression. On the other hand, merely sympathizing with the victim may have been insufficient because the victim could not really be sure that the wrongdoer

was sorry and repentant. Thus, while the victim might be flattered to receive sympathy, little consolation may have been felt if the wrongdoer enjoyed the fruits of her transgression without suffering at least a guilty conscience. This uncertainty about what inferences to draw from the sympathetic wrongdoer is demonstrated by the fact that there was not a significant difference between the sympathy and no-sympathy conditions on the manipulation check question dealing with the sincerity of the C's regret. It is possible that whenever a wrongdoer "offers" something to his victim, such as compensation, reparation, or, in the present case, his sympathy, there may be a tendency to suspect that he is trying to ingratiate himself. The act of offering sympathy might be too obvious an attempt to "buy off" the victim and thereby avoid retaliation. In contrast by expressing guilt and punishing himself for what he has done, the wrongdoer, at least on the surface, would appear even to welcome retaliation from the victim or to convey the impression that he would not feel badly if sanctioning was forthcoming. The victim, therefore, is less likely to suspect that the grieving wrongdoer is actually trying to win the victim's forgiveness.

Ss in our study may have been particularly suspicious of the sympathetic wrongdoer and attributed ingratiating motives to her because both the S and the C were told at the onset of the experiment that the S would be able to inflict noise on the C in the second phase of the session. In view of this, the S may have been inclined to conclude that the C was sympathetic because she knew that the S would have a chance to get even. If, however, the C had not been given this advanced warning that the S would be in a position to retaliate, the S might have been less likely to assume that the C was voicing her sympathy to reduce retaliation. That is, "sympathy" might have been more effective in winning forgiveness if there had been fewer cues present suggesting an ingratiating intent. For example, if the S thought that the C was unaware that she was being watched and overheard on television, then the S might have felt that her sympathy was sincere.

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CROSS-CULTURAL NOTES

Under this heading appear summaries of studies which, in 500 words or less, provide comparable data from two or more societies through the use of a standard measuring instrument, additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfilm Publications

The Journal of Social Psychology, 1979, 107, 277-278

ANTECEDENTS OF ANGER IN NIGERIAN COLLEGE STUDENTS*

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In the USA, Pankratz, Levendusky and Glaudin¹ asked students in a small liberal arts college, to describe situations that made them angry. On the basis of the Ss' responses, they identified seven categories of situations that elicited anger arousal: Stereotypes, Aversive Traits, Put Down, Restricted Role, Pressure Build Up, Self and Self Behavior, and Cruelty and Aggression. The results of their study showed that Aversive Traits, Restricted Role, and Put Down elicited anger arousal more frequently than other categories. Since Bandura² suggests that aggression does not originate internally and its social determinants are alterable, social situations that elicit anger arousal more frequently may differ from culture to culture.

The present study attempts to find out (a) which of the seven categories of social situations elicit anger arousal more frequently in Nigerian college students and (b) whether age of Ss is related to the antecedents of anger. The Ss were 92 male students at a teachers college in Kano City. They were from the lower-middle to middle social classes; ages ranged from 18 to 32 years. They were asked to describe three situations that made them angry. Two hundred seventy-six responses (92×3) were distributed into the seven categories, suggested by Pankratz, Levendusky, and Glaudin, by

* Received in the Editorial Office, Provincetown, Massachusetts, on March 27, 1978.
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¹ Pankratz, L., Levendusky, P., & Glaudin, V. The antecedents of anger in a sample of college students. *J. of Psychol.*, 1976, 92, 173-178

the researcher and his two assistants (interrater reliability ranged between .89 to .93). The results showed that Restricted Role (37.68%), Pressure Build Up (15.94%), Put Down (15.22%), and Aversive Traits (12.32%) were the categories of situations that elicited anger arousal most frequently in Nigerian college students.

The sample was divided into two groups: young ($\bar{X} = 20.71$ years) and old ($\bar{X} = 24.88$ years). When the two groups were compared on their response distributions, they differed significantly from each other ($\chi^2 = 27.62$, $df = 6$; $p < .01$). The Aversive Traits, Pressure Build Up, and Restricted Role situations elicited anger arousal in older Ss more frequently than in younger ones.

The above results show that the role of certain antecedent situations in eliciting anger arousal may vary with age and different cultural settings.

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² Bandura, A. *Aggression: A Social Learning Analysis*. Englewood, N. J.: Prentice-Hall, 1973.

PERSONALITY TRAITS AMONG HINDI-KNOWING INDIAN STUDENTS*

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Many items of personality tests are culture bound, and item equivalence becomes a real problem because similar behaviors are likely to be differently motivated in different cultures. Moreover, the plain linguistic difficulties make the use of the tests equivocal.

The Hindi translation of the Eysenck Personality Inventory (Form A)¹ was prepared with the assistance of three teachers of Hindi and one of English working at the Guru Nanak Dev University departments. An effort was made to retain the essential content of the original EPI items. Particularly for items expressed in terms of English idioms, special care was taken to translate the feeling connotations of the idioms rather than the literal meaning of individual words. The translated version was administered to 300 male and female undergraduate and postgraduate Hindi-knowing volunteer students of various communities studying in the local colleges and teaching departments of the University. The age range was 18 to 24 years. It was not considered appropriate to test for subgroup differences because of a very small number of students from certain communities.

The means and *SDs* of the sample on the extraversion (E), neuroticism (N), and lie (L) scales were as follows: males: E = 11.56, 2.90; N = 11.08, 4.29; L = 3.29, 1.63; females: E = 10.77, 3.38; N = 12.45, 4.24; L = 3.16, 1.88. The *t* test showed that the male *Ss* scored higher on the E scale ($p < .05$) and the female *Ss* on the N scale ($p < .01$). The item-total correlations (point-biserial) computed for each of the three scales revealed that the N scale measured a common factor [only two items (numbers 28 and 57) failed for males and one (item 19) for females]; the E scale contained more poor items, six (items 5, 8, 10, 20, 49, 51) in the case of males and five (items 3, 5, 15, 20, 22) in the case of females; the L scale contained only one (item

* Received in the Editorial Office, Provincetown, Massachusetts, on April 6, 1978. Copyright, 1979, by The Journal Press.

¹ Eysenck, H. J., & Eysenck, S. B. G. *Manual of the Eysenck Personality Inventory*. London: Univ. London Press, 1964.

48) weak item with males. The criterion for poor items was $< .3$ for the item-total correlation.² There were no obvious reasons for the failure of these items. Similar results were obtained while validating the EPI on Ghanaian³ and Ugandan⁴ populations.

The internal consistencies of the scales determined by computing reliabilities from item-total correlations were satisfactory (males: $E = .75$, $N = .81$, $L = .61$; females: $E = .69$, $N = .83$, $L = .71$). The test-retest correlations computed for 60 female students to whom the test was readministered after 70-75 days were as follows: $E = .76$, $N = .81$, $L = .69$. The orthogonal relationship posited by the Eysencks among the scales was borne out, with nonsignificant correlations among the scales except a significantly negative correlation [$r(150) = -.229$, $p < .01$] between E and N for the female sample.

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² Cronbach, L. J. *Essentials of Psychological Testing* (3rd ed.). New York: Harper Row, 1970.

³ Kline, P. The use of the Cattell 16 PF test and Eysenck's EPI with a literate population in Ghana. *Brit. J. Soc. & Clin. Psychol.*, 1967, 6, 97-107.

⁴ Honess, T., & Kline, P. The use of the EPI and the JEPI with a student population in Uganda. *Brit. J. Soc. & Clin. Psychol.*, 1974, 13, 96-98.

REPLICATIONS AND REFINEMENTS

Under this heading appear summaries of studies which, in 500 words or less, provide useful data substantiating, not substantiating, or refining what we think we know; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, 107, 281-282.

SEX DIFFERENCES IN SELF-DISCLOSURE DURING AN INTERVIEW*

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The literature in self-disclosure has tended to indicate that American females are higher disclosers than males. Although this has not been a consistent finding (that is, other studies failed to find sex differences),¹ no study has reported greater male disclosure. The results of recent studies with American adults² may offer an explanation for the inconsistent findings. These recent studies reported nonsignificant differences in male-female self-disclosure on nonintimate topics and significant differences (females disclosing more) on intimate topics.

There are several possible explanations for those studies which did not find sex differences in self-disclosing behaviors. Although a commonly used technique for measuring self-disclosure, self-report measures may be affected by either the instructions³ or the intimacy of the topics employed. The instructions may imply a socially acceptable norm which indicates to the *S* what is desired or expected. If the implied norm operates equally for males and females, it could mask sex differences. A second possible explanation may lie in the nature of the items. The study by Morgan² suggests

* Received in the Editorial Office, Provincetown, Massachusetts, on November 8, 1977. Copyright, 1979, by The Journal Press.

¹ Cozby, P. Self-disclosure: A literature review. *Psychol. Bull.*, 1973, 79, 73-91.

² Morgan, B. S. Intimacy of disclosure topics and sex differences in self-disclosure. *Sex Roles*, 1976, 2, 161-166.

that sex differences would not be found if the scale employed a large proportion of items that were low or moderately low in intimacy.

In the present study, male and female *Ss* were interviewed by members of their same sex on three topics of increasing intimacy (politics, religion, and sex), therefore avoiding any contaminating effect of instructions or inordinate use of intimate or nonintimate items. All interviews were tape-recorded and rated for amount of self-disclosure by two raters. The average correlation for the ratings was .91.

Mean disclosure scores on each topic were analyzed by a 2 (Sex of *S*) \times 3 (Topic) unequal *n* repeated measures analysis of variance. The analysis indicated that there were significant differences in disclosure on the three topics [$F(2,80) = 11.67, p < .01$] and that females disclosed significantly more than males [$F(1,40) = 7.70, p < .01$]. More importantly the analysis also indicated that the Sex of *S* \times Topic interaction was significant [$F(2,80) = 4.68, p < .05$]. *Post hoc* tests indicated males and females did not differ in depth of disclosure on politics. However, the tests did indicate that females disclosed significantly more than males ($p < .05$) on the intimate topics of religion and sex.

The present study replicated, using an interview and, therefore, an actual measure of disclosing behaviors, earlier studies which indicated that females reported more intimate past disclosures than males. The combined results of those studies and the present study support the assumptions that American females are encouraged to self-disclose while self-disclosure in males is not encouraged and that these norms are adhered to especially by males.

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³ Fantasia, S. C., & Lombardo, J. P. The effects of instructions on self-disclosure. *J. of Psychol.*, 1975, 91, 183-186.

VARIETIES OF ACHIEVEMENT MOTIVATION*

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CHARLENE E. DEPNER AND JOSEPH VEROFF

Achievement motivation was originally characterized as a propensity to strive for success in any and all situations in which a standard of excellence was thought to apply.¹ Over the years, however, research has demonstrated numerous factors which may enhance or diminish the attractiveness of a given achievement goal. Recently, Veroff² has argued that, for a given individual, the attractiveness of success will vary according to whether (a) the evaluative standard is determined by the self, by some social referent, or by the inherent demands of the task; and (b) the standard is applied primarily to the process of achieving or the impact of the final accomplishment. He presents a taxonomy of varieties of achievement motivation which vary along these two dimensions.

The present investigation was designed to test for anticipated sex differences in the taxonomy. Projective cues were developed to portray each variety of achievement in Veroff's taxonomy: (a) *autonomous* (self-derived standard, process); (b) *power* (self-derived standard, impact); (c) *responsibility* (social reference standard, process); (d) *competitive* (social reference standard, process); (e) *competence* (task defined standard, process); (f) *task* (task defined standard, impact). These projective cues were administered to 60 undergraduate men and women in a University of Michigan psychology class. The protocols were scored for achievement motivation by using the standard procedure presented in Atkinson.³ The interrater reliability was .86.

Men and women were remarkably similar in their response to all kinds of achievement except one: autonomous achievement. Men's achievement

* Received in the Editorial Office, Provincetown, Massachusetts, on December 12, 1977. Copyright, 1979, by The Journal Press.

¹ McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. *The Achievement Motive*. New York: Appleton-Century-Crofts, 1953.

² Veroff, J. Process vs. impact in men's and women's achievement motivation. *Psychol. Wom. Quart.*, 1977, 1(3), 228-293.

³ Atkinson, J. W., Ed. *Motives in Fantasy, Action, and Society*. Princeton, N. J.: Van Nostrand, 1958.

motivation scores were far lower on the autonomous cue than on any other. Men also scored significantly lower on this cue than women ($t = 3.99$, $p < .01$). A more refined analysis of the achievement imagery to the autonomous achievement cue revealed that women's protocols differed significantly from men's in two respects: (a) a more frequently stated need to work alone, without collaboration ($\chi^2 = 10.79$, $p < .01$), and (b) a more frequently stated need to achieve solely on one's own ($\chi^2 = 7.88$, $p < .01$).

In this investigation, men and women were equally motivated by a number of achievement goals, including those which were publicly witnessed and evaluated. Consistent with previous research,⁴ women were unique in their preference for achievement goals of a more private, intrinsic nature.

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⁴ House, G. I. Orientations to achievement: Autonomous, social comparison, and external. Unpublished Doctoral dissertation, University of Michigan, Ann Arbor, 1972

SOCIAL PARTICIPATION AS A FUNCTION OF INTERNAL-EXTERNAL CONTROL OF REINFORCEMENT*

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Accumulating research has related the personality variable of internal-external (I-E) control of reinforcement to a wide variety of behavioral concomitants.^{1,2} It might be expected that internals will participate more actively in efforts for social help and change, since they believe that their actions can have an effect.³ Their competencies influence them to become active in social action, change, and help for others in society. The present experiment was done in a naturalistic setting to demonstrate the role of locus of control in social action and helping behavior. A request was placed on students' notice board by the Counselling Service of an institution of higher learning in Northern India inviting volunteers to participate in a community Crisis Intervention Program. All who wanted to volunteer in the program demanding five to six hours per week were asked to register their names. Some who volunteered initially dropped out gradually with the passing of time. However, the program continued effectively with active volunteers. After the program had been in operation for three months, this study was planned.

The study was based on three groups of Ss: (a) a group of active volunteers, (b) a group of volunteers who later dropped out, (c) a group of those nonvolunteers who had read the first announcement requesting for the registration of volunteers. In each group there were 15 Ss. All 45 Ss were undergraduate male students. Rotter's I-E scale was administered to the Ss of three groups individually.

* Received in the Editorial Office, Provincetown, Massachusetts, on December 13, 1977. Copyright, 1979, by The Journal Press.

¹ Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychol. Monog.*, 1966, 80(1), Whole No. 609.

² Phares, E. J. Locus of control in Personality. Morristown, N. J.: General Learning Press, 1976.

³ Pandey, J., & Khan, M. E. Social action as a function of internal-external control of reinforcement. *J. Soc. Psychol.* 1977, 103, 305-306.

An analysis of variance of I-E Scale scores revealed that *Ss* of three groups differed significantly ($F = 7.32$, $df = 2/42$, $p < .01$), suggesting externality in the nonvolunteer group ($\bar{X} = 10.26$) and internality in the active-volunteers group ($\bar{X} = 5.60$). The volunteers who initially registered for the programs but later dropped out were found to be in the middle ($\bar{X} = 8.60$) of the two groups. Thus, the means of I-E scale scores of the three groups indicated a linear trend. The I-E Scale is scored in such a way that a high score means *externality* and a low score means *internality*. The results of the study clearly indicate that internals participated more actively in the effort for community social work.

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EFFECTS OF SKIN COLOR AND HAIR DIFFERENCES ON FACIAL CHOICES OF KINDERGARTEN CHILDREN*

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Studies of children's racial preferences, using the doll choice technique, imply that skin color cues are the only salient indicators of racial choices.¹ The role of feature details in those choices has not been studied. The white dolls in the studies of Clark and Clark and Hraba and Grant had blue eyes and blond hair, while the black dolls had dark eyes and dark hair. Thus, preference for white or black could have reflected feature preferences rather than skin color preferences. Support for the feature preference is found in Piaget's theory of cognitive development.² According to Piaget, children in the preoperational state of thinking find it difficult to understand the relationship between a whole concept and its components and, consequently, they may be overly impressed by changes in one single feature of an object. A racial image as a whole may be comprehended by the child on the basis of one of its parts: i. e., a single feature. Although skin color seems to be the most striking feature of racial differences, there is no empirical evidence that in all cases the one feature that children focus on is skin color. Other racial features—e. g., hair—may play an equally important role in determining racial choices.

The present study explored the following questions: (a) Are there any differences in racial preferences of black and white children based on skin color and hair features? (b) Is there an additive effect of two racial characteristics, which influenced children's choices?

The Ss were 62 black and 50 white kindergarten boys and girls between

* Received in the Editorial Office, Provincetown, Massachusetts, on December 19, 1977. Copyright, 1979, by The Journal Press.

¹ Clark, K. B., & Clark, M. K. Racial identification and preference in Negro children. In T. Newcomb & E. Hartley, (Eds.), *Reading in Social Psychology*. New York: Holt, 1947. Hraba, J., & Grant, G. Black is beautiful: A reexamination of racial preference and identification. *J. Personal. & Soc. Psychol.*, 1970, 16, 398-402.

² Piaget, J. *The Origins of Intelligence in Children*. New York: Norton, 1963.

the ages of 4-9 and 6-1, from middle- and lower-middle-income families. They attended several racially integrated public schools in New York City. They were presented with four dolls, on the basis of the paradigm used by Clark and Clark, with the following modifications: one of the black dolls had straight black hair, the other had curly black "Afro" hair; one of the white dolls had curly blond hair, the other had straight black hair. The underlying assumption was that the combination of Afro hair and black skin color in one doll would reinforce black-oriented choices, whereas blond hair and white skin color would reinforce white-oriented choices. Thus, as a result of this additive effect, it was assumed that these two dolls would be chosen more often as representatives of their respective races.

Our findings suggest the existence of two separate patterns of racial choices for black as compared with white kindergarten children. The white children were clearly ethnocentric, while black children were not. Seventy percent of the white *Ss* preferred the white dolls over the black dolls ($\chi^2 = 8.0, p < .01$); 48% of the black *Ss* chose the black doll, while 52% chose the white dolls ($\chi^2 = .73, p > .05$). The results indicate that there was no additive effect of skin and hair racial characteristics on the children's choices of the black dolls. However, the *Ss* did show some discrimination against the blond white doll. These findings thus support the assumption that features other than skin color may compete for the child's attention and are important in shaping children's racial preferences and self-esteem.

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CURRENT PROBLEMS AND RESOLUTIONS

Under this heading appear summaries of data which, in 500 words or less, would increase our comprehension of socially compelling problems, hopefully move us somewhat closer to a solution, and clearly show promise of transcending their own origin in the Zeitgeist; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, 107, 289-290

ERROR IN SELF-ASSESSMENT OF MORAL JUDGMENT STAGES*¹

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For moral education programs based in the cognitive-developmental approach, a critical requirement is the ability of the moral educator to assess moral reasoning stages accurately in order to create an appropriate amount of disequilibrium to stimulate advance. Educators who either over- or underestimate their own stage will not be able to make the appropriate discriminations needed for effective interventions. Given the value-laden nature of Kohlberg's stages, it is likely that educators with minimal training in moral theory will overestimate their own stage. The present study examined the magnitude of this phenomenon.

A total of 110 college students (51 males and 59 females) from upper level psychology classes served as voluntary Ss. They ranged in age from 18 to 32 ($\bar{X} = 22.3$, $\sigma = 3.5$) and in social class from 1 to 5 on Hollingshead's five-point scale ($\bar{X} = 3.1$, $\sigma = 1.2$). The Ss can be considered comparable to typical primary and secondary teachers in ability level and psychological training.

* Received in the Editorial Office, Provincetown, Massachusetts, on November 8, 1977. Copyright, 1979, by The Journal Press.

¹ Reprints and an extended report may be obtained without charge from the author at the address shown at the end of this article.

All Ss were administered Form A of Kohlberg's moral judgment survey². Protocols were scored by the author (interrater reliability coefficient of .90), using Kohlberg's revised scoring procedures. The Ss were subsequently given formal classroom training in moral judgment theories (with emphasis on Kohlberg) consisting of 4-6 hours of lectures and discussions, extensive textbook and journal readings, and interpretive handouts of sample responses by stages with explanations of underlying structures of reasoning. This amount of training is probably typical of (or exceeds) that of many primary and secondary teachers who are currently utilizing some form of moral education procedure in their classrooms. Participants subsequently scored their own previously submitted protocols and gave confidential ratings of their own moral reasoning stages.

The distributions of stage scores were as follows: Ss' assessments, Stage 1(0%), 2(0%), 3(6.4%), 4(11.8%), 5(62.7%), 6(19.1%); researcher's assessments, Stage 1(0%), 2(14.5%), 3(40.9%), 4(34.5%), 5(10.0%), 6(0%). The two distributions differ significantly ($\chi^2 = 95.05$, $df = 5$; $p < .001$). Only 17.3% of the Ss correctly assessed their stage scores. The distribution of errors (subjective minus objective) was as follows: +1(30.9%), +2(36.4%), +3(10.9%), +4(4.6%). Ss at the higher stages made increasingly more accurate assessments. This may indicate that higher stage reasoners were more accurate assessors, that a ceiling effect on error was operative, or that higher stage reasoners were more often accidentally correct, since the most common error was assignment of Stage 5 to the self.

The drastic overestimations of stage scores was most likely due to one of two factors: (a) a social desirability effect from the higher valuation of the higher stages, and/or (b) an inability of lower stage reasoners to comprehend higher stage reasoning, with an attendant tendency to reinterpret the higher stages into one's own dominant stage. These findings imply that moral educators need extensive training in moral development theory and assessment, including objective assessment feedback. Further, greater emphasis needs to be placed on the nonevaluative aspects of the moral stages to minimize distortions in stage assessments.

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² The Kohlberg survey and most recent scoring manual are available from the Center for Moral Education, Harvard University, Cambridge, Massachusetts 02138.

CONSTRUCTION OF A FIVE-FACTOR ATTITUDE INSTRUMENT FOR EVALUATION OF THE FOOD FOR WORK PROGRAMS*

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GENE C. WHAPLES AND TITUS O. OGUNFIDITIMI

Valid and reliable instruments useful for predicting changes among the rural people in developing countries are limited. The Work Attitudes Towards the Food for Work Program (WAF)¹ instrument, with further testing and modification, may be useful in researching rural community development programs in developing countries.

A 70-item attitude questionnaire was prepared to collect information from rural workers in the AID sponsored Food for Work Program in rural Ghana which is a self-help program using food as a work incentive. The instrument uses a five-point Likert scale ranging from Strongly Agree to Strongly Disagree. It is developed around 10 variables: education, religion, community participation, family solidarity, self reliance, political awareness, work values, job satisfaction, propensity to save, and consumption pattern.

A stratified random sample of 400 workers was identified and a team trained and led by the researcher collected the data in the local villages of Ghana. Sixty-five percent of the workers were illiterate. Data were collected from this group through interviewing rather than by written response. The average age of the Ss was 40 years and ranged from 20 to 85 years; 49% were male; 51% were female. Of this group, 71% indicated they were Christian, 2% were Moslems, and the remaining 27% classified themselves as traditional.

The items were factor analyzed. The principal factor with iteration was employed, and the orthogonal rotation method with varimax solution was

* Received in the Editorial Office, Provincetown, Massachusetts, on November 8, 1977. Copyright, 1979, by The Journal Press.

¹ For a copy of the instrument and further discussion concerning its development, write to either the first author at the Maryland address or the second author at the Nigerian address shown at the end of this article.

also used. Five factors consisting of six items each were identified. These 30 items, six per factor, each had loading equal to or greater than .30. They constitute the instrument developed.

It may be too early to provide appropriate names for the factors. Additional research is necessary to insure that the items continue to group. However, an attempt was made to name these factors appropriately (reliability coefficients are in parentheses):

1. *Institutional Value*. Attitudes towards institutions, such as religion, education, community, authority (.51).

2. *Individualistic Attitude*. How people feel about themselves as related to the program they are in (.46).

3. *Acceptance*. S's acceptance or satisfaction with the program (.51).

4. *Incentive*. Attitudes toward types of remuneration for services performed or to be performed (.51).

5. *Security*. Attitudes toward life-long ambitions or goals (.53).

It is recognized that the presentation of this instrument may be premature, as additional research is necessary to develop its reliability and validity. However, the need for instruments that may be effective in evaluating programs in rural areas of developing countries is critical. This instrument, used as is, may be of value in similar environments. This instrument with appropriate modifications may be useful in evaluating similar but different community development programs in rural areas of developing countries.

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IDENTICAL FIRST NAMES FOR PARENT AND CHILD*¹

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The phenomenon of naming American children after their parents has sometimes generated hostility in the offspring. For example, Henry James disliked his "junior" status intensely:²

I have a right to speak of that appendage—I carried it about for forty years . . . disliking it all the while, and with my dislike never in the least understood or my state pitied. . . .

But how well do typical children named after their parents like their first names? No prior research on this topic could be located.

The Ss consisted of 1727 students in grades 2 through 6 of a socioeconomically heterogeneous suburban school district. One hundred ninety-one boys (22%) were found to have the same first name as their fathers, and 27 girls (3%) had the same first name as their mothers. Of these children with the same first names, 168 boys and 22 girls had rated the desirability of their own first names. A comparison sample of 168 boys and 22 girls stratified by grade and sex was randomly drawn from the remaining students. These comparison children, with different first names from their parents', had also rated the desirability of their own names. The numbers of blacks and whites were about the same in comparison and identical groups.

All children rated as "like," "neutral," or "don't like" a large number of first names including their own.³ Twenty-one of the 168 boys with the same name as their fathers rated their names as neutral or disliked. Similarly, 26 of the 168 comparison boys rated their names as either neutral or disliked. The remainder in both groups reported that they liked their

* Received in the Editorial Office, Provincetown, Massachusetts, on November 15, 1977. Copyright, 1979, by The Journal Press.

¹ The authors would like to thank Richard S. Mansfield for helpful comments on this paper.

² Edel, L. Henry James, the Untried Years: 1843-1870. Philadelphia: Lippincott, 1953. Page 56.

³ Busse, T. V., & Helfrich, J. Changes in first name popularity across grades. *J. of Psychol.*, 1975, 89, 281-283.

names. The difference between groups is not significant (chi square = 40, $df = 1$).

Of the 22 girls with the same name as their mothers, seven rated their names as either neutral or disliked. Only two of 22 comparison girls rated their names as neutral or disliked. There is perhaps a trend here, but the numbers are too small to make much of it. The Fisher exact probability test was used because of the small numbers and showed no significant difference ($p = .54$).

It is interesting to note that 15 of the 168 boys having the same first name as their fathers wrote a name other than their legal given name on various forms used in this research,⁴ whereas only two of the comparison boys did so. This difference is significant (chi square = 8.92, $df = 1$, $p < .01$). Two of 22 girls with first names the same as their mothers used other names, but none of the comparison girls did so.

In summary, elementary-school boys with names identical to their fathers' names liked their names about as well as other boys did. There is a very slight trend, however, suggesting that elementary-school girls with identical names may like their names less than other girls do. Also boys with names identical with their fathers' names were more likely than other boys to use a substantially different name when identifying themselves.

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⁴ Short names (e. g., Jim, Jimmy) were considered to be the same as the longer name (e. g., James).

CHANGING BELIEFS CONCERNING THE CAUSES OF POLLUTION*

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DARHL M. PEDERSEN

Those responsible for informing the public about environmental pollution have little idea what the public already knows or what the effects of the information are. Susceptibility to persuasive communications about pollution is an important contemporary issue. Ritchie and Phares found that Ss with low internal control changed attitudes more than Ss with high internal control.¹ People feel they have very little control over environmental pollution. Samuels reported that serious air pollution exists in Staten Island, yet there are few recorded complaints.² The present study investigated the effects of two kinds of persuasive communications upon beliefs regarding the degree to which pollution is caused by man *versus* the degree it is caused by nature. Since locus of control was considered to be quite external to the Ss, the hypothesis was that a "man as polluter" article should increase existing beliefs about man as the responsible agent in pollution, and a "nature as polluter" article should produce a decrease in existing beliefs.

Sixty male and female introductory psychology students were randomly assigned to form three equal sized experimental groups. All Ss were given a 10-item rating scale pretest designed to measure the belief that man (not nature) is responsible for pollution. Each item was rated on a five-point scale from strongly disagree to strongly agree. Half the items were statements consistent with the belief that man is primarily responsible for pollution, and half indicated that nature is responsible. For the "man is responsible" items the high score of 5 was assigned to strongly agree, and for the "nature is responsible" items it was assigned to strongly disagree. A

* Received in the Editorial Office, Provincetown, Massachusetts, on December 21, 1977. Copyright, 1979, by The Journal Press.

¹ Ritchie, E., & Phares, E. J. Attitude change as a function of internal-external control and communicator status. *J. Personal.*, 1969, 37, 429-443.

² Samuels, S. The role of behavior research in air pollution control: Past and future. Paper presented at symposium on *Role of Perceptions and Attitudes in Decision-making in Resource Management*, University of Victoria, Victoria, British Columbia, Canada, 1970.

high overall score indicated "man is responsible" belief; a low score, a "nature is responsible" belief. After the pretest, Group I read an article stating that nature is primarily responsible for pollution; Group II read one stating that man is principally responsible; Group III, the control group, received nothing to read. Both articles were written by persons with high credibility: the Director of a U. S. Geological Survey and a Chicago Sun-times writer. Following the reading of the articles the same rating scale was given as a posttest.

A 3×2 analysis of variance was completed where Factor A was the experimental group and Factor B represented the pre- and posttest scores. Failure to find significance for Factor A [$F(2,57) = 1.87, p < .16$] indicated that over pre- and posttesting the experimental groups did not differ from each other. A nonsignificant Factor B finding [$F(1,57) = .14, p < .71$] showed that the level of ratings was the same for the pre- and posttest across all three groups. The significant A \times B interaction [$F(2,57) = 11.51, p < .001$] suggests that the groups changed differentially from pre- to posttesting. The Newman-Keuls test³ indicated that the first article reduced and the second article increased "man as polluter" beliefs. Thus, the hypothesis was confirmed. No significant difference between pre- and posttesting was obtained for the control group.

The results suggest that Americans may be quite malleable in their beliefs toward the causes of pollution. Part of this persuasibility may be produced by a feeling that they have no control over pollution. Perhaps Americans are undecided about the genesis of pollution or perhaps the causes are not considered to be as important as the effects.

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³ Winer, B. J. *Statistical Principles in Experimental Design* (2nd ed.). New York: McGraw-Hill, 1971.

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(One word titles are never abbreviated. The word *the* is not used nor its equivalent in any other language. The word *of* or its equivalent in other language is used only to discriminate what would otherwise be identical titles in different languages. The word *and* is always used, but indicated by & in the Roman alphabet. Only English words are indicated here, but the corresponding words in other languages should receive a corresponding abbreviation. All abbreviations and all one word titles should be in italics.)

Abnormal	<i>Abn.</i>	Japanese	<i>Jap</i>
Abstracts	<i>Abst.</i>	Journal	<i>J.</i>
American	<i>Amer.</i>	Mathematical	<i>Math</i>
Anatomy	<i>Anat.</i>	Measurement	<i>Meas.</i>
Animal	<i>Anim.</i>	Medical	<i>Med</i>
Applied	<i>Appl.</i>	Mental	<i>Ment</i>
Archives	<i>Arch</i>	Monographs	<i>Monog</i>
Association	<i>Assoc.</i>	Neurology	<i>Neurol</i>
Attitude	<i>Attit.</i>	Opinion	<i>Opin.</i>
Australian	<i>Aust</i>	Orthopsychiatry	<i>Orthop-sychiat</i>
Behavior	<i>Behav.</i>	Personality	<i>Personal</i>
British	<i>Brit.</i>	Personnel	<i>Person</i>
Bulletin	<i>Bull.</i>	Philosophy	<i>Philos.</i>
Bureau	<i>Bur.</i>	Physics	<i>Phys.</i>
Canadian	<i>Can.</i>	Physiology	<i>Physiol</i>
Character	<i>Charac.</i>	Proceedings	<i>Proc.</i>
Children	<i>Child.</i>	Psychiatry	<i>Psychiat.</i>
Chinese	<i>Chin.</i>	Psychoanalysis	<i>Psychoanal</i>
Clinical	<i>Clin.</i>	Psychology	<i>Psychol</i>
College	<i>Coll.</i>	Psychosomatic	<i>Psychosomat</i>
Comparative	<i>Comp.</i>	Quarterly	<i>Quart.</i>
Consulting	<i>Consult.</i>	Religious	<i>Relig.</i>
Contributions	<i>Contrib.</i>	Research	<i>Res.</i>
Development	<i>Devel.</i>	Review	<i>Rev.</i>
Educational	<i>Educ.</i>	School	<i>Sch.</i>
Experimental	<i>Exper.</i>	Science	<i>Sci.</i>
General	<i>Gen.</i>	Social	<i>Soc.</i>
Genetic	<i>Genet.</i>	Statistics	<i>Stat.</i>
Indian	<i>Ind.</i>	Studies	<i>Stud.</i>
Industrial	<i>Indus.</i>	Teacher	<i>Teach.</i>
International	<i>Internat.</i>	University	<i>Univ.</i>
Italian	<i>Ital.</i>		

Preparation of Manuscripts for The Journal Press

GENERAL INSTRUCTIONS

- 1 The proper sequence for the parts of your submitted manuscript is as follows: (a) references, (b) footnotes, (c) tables, (d) figures, and (e) figure legends. However, monographs start with a table of contents and may have an acknowledgment page before the text and an appendix immediately after the text.
- 2 Use heavy typewriter paper, $8\frac{1}{2} \times 11$ inches, double space *all* lines, and leave margins for editorial work. Do not use onionskin, odd sizes, and abrasive or wax finishes.
3. Submit original typewritten version and one copy. Retain second copy for proofing.
4. Retype any page on which written corrections have been made.
5. Do not begin a sentence with a numeral.
6. A summary at the beginning of the text is required for articles over 500 words.
- 7 Each quotation should indicate the page number of the original source. The original publisher must give permission for lengthy quotations and use of tables or figures.
8. Do not fold your manuscript.
- 9 Enclose a submission letter, with a statement that the manuscript is not under consideration elsewhere. If you are unknown to the Editors, kindly give your credentials.

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A. TEXT DIVISIONS.

1. THE TITLES OF JOURNAL ARTICLES AND THE MAJOR SUBDIVISIONS OF MONOGRAPHS ARE PRINTED IN TEN-POINT CAPS CENTERED ON THE PAGE

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THE EFFECTS OF SOCIOECONOMIC DEVELOPMENT ON DRAW-A-MAN SCORES IN TURKEY*

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ÇİĞDEM KAĞITÇIBAŞI

SUMMARY

The Goodenough Draw-a-Man Test was administered to 218 fifth grade boys and girls from rural and urban areas in Turkey. The three rural villages varied in their degree of remoteness from the city and in their levels of modernization. The urban children belonged to lower and middle SES groups. The level of socioeconomic development was found to be the main factor explaining the variation in the obtained IQ; rural children from the most remote village had the lowest scores, and urban middle-class children had the highest. The results were interpreted in terms of environmental deprivation and stimulation.

A. INTRODUCTION

Many advantages of the Goodenough Draw-a-Man Test have been noted (1, 2, 3, 7, 9, 11, 12). Among these are its appeal to children, its easy administration, its nonverbal character, its lack of dependence on academic schooling and on art training or artistic ability, the reliability of its scoring, and its universally familiar subject matter. It fares as well as some other accepted intelligence tests when correlated with the Stanford-Binet (.74), and it has some relationship (.5, .6) to academic achievement (.58). Thus, it is generally accepted as an indicator of intellectual functioning. However, its correlations especially with school grades and teachers' ratings are not high (.1, .10), which is a shortcoming for the validity of the test. This is probably mainly due to the nonverbal nature of the test and the heavy emphasis on verbal skills in school.

The Draw-a-Man Test has been applied in a great number of highly varied environments most of which can be considered underprivileged.

* Recommended by Edwin Terry Prothro of the Editorial Board, received in the Editorial Office, Provincetown, Massachusetts, on October 11, 1978, and given special consideration in accordance with our policy for cross-cultural research. Copyright, 1979, by The Journal Press

Dennis (3) reports the scores of 40 such groups, and on the basis of the obtained evidence he concludes that "... in the case of groups with little indigenous (representational) art, Goodenough scores reflect different degrees of acculturation to Western civilization" (3, p.150-151). Using Dennis' conclusion as our starting point, we would hypothesize that the Draw-a-Man Test scores reflect the level of modernization in Turkey, where there is little indigenous representational art. This hypothesis is obviously based on the assumption that intellectual functioning, which is assessed by the Draw-a-Man Test, is itself influenced by general environmental factors and, therefore, by modernization and socioeconomic development.

B. METHOD

1. *The Instrument*

The application of the Goodenough Draw-a-Man Test in Turkey started in coordination with the work of the late Professor Dennis in the Arab Middle East. As Dennis had already done extensive testing with the original 1926 scoring technique of the test in 11 countries, and as this technique correlated very highly with the later revision by Harris in 1963 (8) the original version was also used in Turkey.

2. *Subjects and Procedure*

The test was administered by the author and an assistant¹ to groups of fifth graders in the city of Bursa,² Turkey, and in three of its rural villages. The test instructions for group administration were translated into Turkish and were used in the standard form.

Three rural villages varying in their degree of development and remoteness from the city were chosen, and all the children in the fifth grade in the village schools were administered the test. Clear-cut differences existed among these villages in their relative degree of integration into the market economy, the relative quality of their buildings, roads, etc., and their general appearance. There were also differences among them in terms of literacy and level of education of the adult population. These variations in the degree of socioeconomic development closely corresponded to their proximity to the city, the village nearest the city being the most developed and the most remote one being the least developed.

In the urban context two lower-class shanty town schools and two

¹ Special thanks are due to Mr Ercan Alp for his help in the administration of the test.

² Bursa is a city of about 375,000 inhabitants in northwestern Turkey

middle-class private schools were selected. Very noticeable differences also existed between the lower- and middle-class urban areas in both the physical set-up and in the types of occupations, levels of education, and income of the people living there. Table 1 gives the numbers of children from each area and their mean group IQs obtained on the Draw-a-Man Test. Of the total 218 children tested, 114 were boys and 104 were girls; 115 children were in the 11-year age group, 62 in the 12-year age group, and 41 in the 13-year age group at the time of testing.

Scoring of the drawings was done blind, without any knowledge of which drawing belonged to which group. This task was undertaken by a highly experienced scorer of the test who was an assistant to Professor Dennis at the Center for Behavioral Research, American University of Beirut, Lebanon.³

TABLE 1
GROUPS AND THEIR MEAN IQs

Area of dwelling	Total N	Mean IQ	SD
Village			
most remote	10	63.50	12.44
less remote	21	74.05	10.91
near (least remote)	14	85.29	8.45
Urban low (shanty town)	80	90.11	14.63
Urban middle	93	102.09	16.04
Total	218	92.23	16.94

C. RESULTS

Three dimensions of comparison were conceptualized. The first and theoretically most important one is the dimension of socioeconomic development. As indicated before, the three villages varied considerably on this dimension going from the least developed to the most developed, corresponding to their degree of remoteness from the city. No important differences existed between the two urban shanty town areas from which the two urban lower-class schools were chosen. The two middle-class private schools were also quite similar to each other.

³ The collaboration of the late Professor Wayne Dennis and the assistance and support of Professor Edwin Terry Prothro, director of the Center are appreciated

The group mean *IQ*s show a striking linear variation in correspondence to the level of socioeconomic development. All the differences between the mean scores are significant and in the expected direction. The level of socioeconomic development is considered to be a broad dimension, including urbanization and SES variations. These variations form a linear progression approximating one single dimension of development.

An analysis of variance was run on the main effects and the two-way and three-way interaction effects of the socioeconomic development level, sex, and age on the Draw-a-Man scores. Of the three independent variables, only the socioeconomic development level had a significant effect on *IQ* scores ($F = 9.33, p < .001$). All other main effects and interaction effects were nonsignificant. Thus, the level of socioeconomic development appears to be the main factor responsible for variations in performance on the Draw-a-Man Test.

As a final analysis, Draw-a-Man *IQ* scores were regressed on the level of socioeconomic development in an attempt to assess the amount of variation in test performance that could be explained by this variable. This simple regression analysis also pointed to the striking effect of the level of socioeconomic development on *IQ* scores. A substantial amount of the variation in *IQ* score was explained by this variable, alone ($r^2 = .40$), since these two variables correlated at .63. The regression coefficient indicated that one unit increase in the level of socioeconomic development⁴ adds .95 of a unit to *IQ* score.

D. DISCUSSION

The obtained variations in *IQ* scores are most probably due to different levels of environmental stimulation. Little intellectual stimulation exists in the most remote village as a result of low levels of parental education, lack of books, magazines, picture books, newspapers, and television. There is also very little available in the form of photographs, drawings, and paintings of people. This is probably due mainly to the general economic deprivation prevalent in the village. It may also reflect, to some extent, a contemporary effect of the historical Muslim prohibition of representational art, even though this prohibition is not being practiced today. Thus, it may be said that children in the most remote village have had a limited experience with the human figure or any other object represented on the two-

⁴ Altogether there are five units of development; namely, 1 = most remote village, 2 = less remote village, 3 = near village, 4 = urban low, 5 = urban middle.

dimensional surface. Although in school they were expected to gain this experience to some extent, it may be judged from the obtained performance that this experience was probably inadequate in counteracting or compensating for the more general environmental deprivation.

As we go from the most remote village to the nearest village, economic development and access to modern technology and communication increase, thus the corresponding increases in the Goodenough scores. In the urban context, also, there is considerable variation in SES and general life styles between the shanty town areas and the middle-class areas from where the schools were chosen. Most of the people in the shanty town areas had moved into the city from rural regions, had low levels of education, and were mostly unskilled and semiskilled laborers. The children in the two private schools, on the other hand, came mostly from urban middle-class families, and they had full access to modern communications and technology: thus their "normal" performance on the Goodenough Draw-a-Man Test.

These findings provide clear evidence for the environmental influences on intellectual functioning and more specifically for the importance of socioeconomic development on the perceptual-cognitive functioning of children. Harris (8) proposed that the child's drawing the human figure reflects his growth in conceptual complexity and discriminations about the human figure as an idea. It requires sensory stimulation, perception, conceptualization, and thinking, as well as visual-motor coordination. The variations in performance demonstrated by our groups belonging to the same national, racial, and ethnic backgrounds render doubtful inferences based upon native innate abilities of groups. Rather, these variations point to the immense importance of environmental factors in "cultivating" whatever innate abilities persons may possess. The implications for widespread preschool, formal, and adult education together with the role of the mass media and most importantly technological and socioeconomic development for higher levels of intellectual functioning appear obvious. In Wayne Dennis' words, ". . . it is not that the tests are unfair but that the environment that causes diminished functional intelligence . . . which does not permit normal intellectual growth is unfair to . . . children everywhere" (4, p. 4).

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SOCIAL PERCEPTION OF INGROUP AND OUTGROUP MEMBERS IN INDIA*¹

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SUMMARY

One hundred male undergraduates, members of five caste groups in India, evaluated members of their own caste group, religious group, and other religious groups. Allport's prediction that we all define ingroup on the basis of a narrow criterion was contrasted with Paranjpe's prediction that position of a group within a societal framework determines the criterion of defining ingroup. It was found that Ss coming from the upper part of the social continuum defined their ingroup on the basis of caste, as Allport predicts. Ss coming from the lower part of the continuum, however, defined ingroup on the basis of religion consistent with the prediction of Paranjpe. It was, therefore, concluded that the bases of ingroup feelings among the members of a society vary with their position within the societal framework. Furthermore, the ethnocentrism theory of Paranjpe provides a better account for ingroup feelings than that of Allport.

A. INTRODUCTION

How do people evaluate members of their own ingroup and other outgroups? The answer depends upon the subjective criterion people use to define ingroup and outgroup. According to the Allport theory of ethnocentrism (1), we all have a tendency to identify ourselves with a small group defined by some dominant characteristics, such as race, religion, nationality, etc. The various criteria of defining ingroup differ in their comprehensiveness. Caste, for example, is the narrowest criterion; hence, it gives the greatest ingroup feeling. Nationality, on the other hand, is a wider criterion, and so it gives a lower feeling of ingroup. Allport notes

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that as the bases of group feelings grow wider, the amount of ethnocentrism tends to decrease. For example, one's family which represents the firmest ingroup causes more ethnocentrism than one's religious group which is considerably larger.

According to Allport's theory, people coming from different strata of society follow the same pattern of ethnocentrism. Those from one end of the social scale feel more positive toward themselves and more negative toward the people coming from the other end, and *vice versa*.

This proposition does not seem to hold true in Indian society. For example, Paranjpe (3) observes that only *Brahmins*, who come from the upper stratum of the Indian society, follow the theoretical prediction of Allport. *Chamhars* who come from the lowest stratum of the society have a tendency to feel equally positive toward their other subcastes. Perhaps they define their ingroup on the basis of a broader criterion of religion. This tendency suggests that ethnocentrism is highly culture-specific and that Allport's theory may hold true in India only for people coming from the upper stratum of society.

The present paper reports findings from a study designed to test predictions generated by Allport's theory and by Paranjpe's theory of ethnocentrism. If the Allport theory is correct, then Ss coming from the different levels of social strata should express ethnocentric feeling more on the basis of their caste than religion. On the other hand, if Paranjpe's theory is correct, then people coming from the upper part of social continuum should pass judgment in line with Allport's prediction, whereas people from the lower part of social continuum should not make a significant distinction between caste and religious groups.

B. METHOD

1. Subjects

One hundred male undergraduate students of the University of Udaipur, Udaipur, Rajasthan, India served as Ss. There were 20 Ss from each of the five groups: *Upper Hindu caste*, *Lower Hindu caste*, *Tribal Hindu caste*, *Sunni Muslim caste*, and *Shia Muslim caste*. The first three groups represent three different levels of caste hierarchy. The last two groups represent a different religion, but are comparable to the *Upper Hindu caste* group with respect to their social position.

2. Scales

A 10-item ingroup-outgroup attitude scale (2), consisting of 10-bipolar adjectives (kind-cruel, reliable-unreliable, honest-dishonest, good-bad, happy-sad, healthy-unhealthy, patriot-traitor, fair-ugly, loyal-disloyal, and one's own-others), was used to measure the feelings of ethnocentrism. Each item had a seven-point scale. The ethnocentrism scores thus ranged from 10 (most favorable attitude) to 70 (most unfavorable attitude).

3. Procedure

Ss were tested in small groups of 3-5 in the Psychology Laboratory. They were asked to rate five different ethnic groups: *Upper Hindu caste*, *Lower Hindu caste*, *Tribal Hindu caste*, *Sunni Muslim caste*, and *Shia Muslim caste* on the response scale described above. The order of presentation of the five groups was randomized, and the S rated each group separately.

4. Data Analysis

For each S three types of scores were calculated. Ratings of their own caste group constituted scores for own caste group; ratings averaged across the three Hindu subgroups and two Muslim subgroups constituted attitude toward the members of same religion for the Hindu and Muslim religions, respectively; ratings averaged over the two Muslim subgroups constituted attitude toward other religion for Hindus; ratings averaged over the three Hindu subgroups constituted the attitude toward other religion for Muslim Ss. The attitude scores for same caste, same religion, and other religion groups were analyzed to test the hypotheses.

C. RESULTS AND DISCUSSION

Analyses of data disclosed three principal results. They are presented below (for all F values given, $df = 1/38$).

First, the *Upper Hindu caste* Ss evaluated members of their own caste more favorably ($M = 25.05$) than members of their religious group ($M = 30.78$, $F = 5.73$, $df = 1/38$, $p < .01$) which was in turn rated more favorably than people of other religions ($M = 36.35$, $F = 5.57$, $p < .01$). This result is consistent with Allport's prediction that the ethnocentric feeling arises from the narrowest criterion which is caste in the present case.

Second, Ss belonging to *Lower Hindu caste* felt equally favorable toward people of their own caste ($M = 27.30$) and religious ($M = 28.17$) groups

($F = .87$) Similarly, *Tribal Hindu caste* Ss were equally positive toward people of their own caste ($M = 21.60$) and religious ($M = 22.28$) groups ($F = .68$). It is notable that both groups of Ss rated people of other religious groups ($M = 32.78$ and $M = 37.52$ for *Lower Hindu caste* and *Tribal Hindu caste*) more negatively than their own caste or religious groups ($F_s = 4.61$ and 15.24 , respectively, $p_s < .01$). The ethnocentric feeling emerged among these two groups of Ss from a relatively broader criterion of religion. This result is consistent with Paranjpe's conceptualization of ethnocentrism and is inconsistent with Allport's theory.

Finally, the results obtained from two Muslim groups showed a trend similar to that obtained from the *Upper Hindu caste* Ss. *Sunni Muslim caste* Ss judged people of their own caste ($M = 22.40$) more positively than people of their own religion ($M = 26.05$, $F = 3.65$, $p < .05$) and other religions ($M = 30.10$, $F = 7.70$, $p < .01$). *Shia Muslim caste* Ss also rated members of their own caste group ($M = 24.95$) more favorably than members of their own religion ($M = 28.63$, $F = 3.68$, $p < .05$) and other religions ($M = 34.52$, $F = 9.57$, $p < .01$). Both Muslim groups used a narrower criterion of caste in defining ingroup. Perhaps the Muslims of India consider themselves on par with the *Upper Hindu caste* people. Comparable results across Ss of *Upper Hindu caste*, *Sunni Muslim caste*, and *Shia Muslim caste* groups provide considerable cross-cultural generality for both the Allport and Paranjpe notion of ethnocentrism.

Findings of the present study suggest that the feelings of ethnocentrism grow out of the different criteria adopted to define the ingroup. Those who come from the upper social stratum employ a much narrower criterion than do their counterparts from the lower stratum. This result is contrary to the Allport theory of ethnocentrism which proposes that all people use a narrow criterion to define ingroup. The Paranjpe thesis that the criterion used to define ingroup depends upon the social position of the group members themselves is thus supported.

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VOLUNTARY EXPOSURE TO INFORMATION DURING AND AFTER THE WAR IN LEBANON*

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SUMMARY

This study tested the hypothesis that, regardless of the *S*'s stand, voluntary exposure to information, as well as exposure to both sides, will be significantly greater during than after the war.

A sample of 132 Lebanese male and female undergraduates consisting of three subsamples were used as *SS*: (a) 59 *SS* who continuously favored one side and were against the other throughout the 1975-76 war in Lebanon, (b) 30 *SS* who had a neutral stand throughout the war, and (c) 43 *SS* who were against both sides of the conflict.

For all three subsamples, the results showed that amount of exposure to information, as well as exposure to both sides, was significantly greater during than after the war. These results were considered as supporting the importance of "utility of information" as a significant factor contributing to exposure preferences.

A. INTRODUCTION

Exposure to information, particularly selective exposure, has been extensively studied and reviewed (e.g., 1, 4, 5, 6, 7). In the light of confusing and inconsistent results with respect to selective exposure, Mc Guire proposed that the time has come to ". . .discontinue the current excessive preoccupation with this one possible tactic of defensive avoidance" (5, p. 800), and Freedman and Sears suggested that ". . .research in this area turn away from questions dealing primarily with the selective exposure hypothesis, and focus more on the questions of what factors chiefly determine voluntary exposure to information . . ." (1, pp. 94-95). Also, after stating that the direction of selective bias, in favor of or against our stand,

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varies depending on a number of factors. Sherif pointed out that "much more research is needed on the selectivity problem" (7, p. 333).

In this study, the general problem of voluntary exposure to, or avoidance of, information was investigated shortly after the 1975-76 war in Lebanon with a sample of university students. It was expected that the extent of exposure to information would vary, among other things, depending on the relative conditions of war *versus* peace in the country. It was reasoned out that, for practical and even survival reasons, Ss would expose themselves maximally to all kinds of information, and hence would be less selective, during than after the war, regardless of their stand. More specifically, it was hypothesized that, regardless of the stand, exposure to information would be significantly greater, and hence selectivity would be significantly less, during than after the war.

B. METHOD

1. Subjects

The sample used consisted of 132 Lebanese undergraduate students (67 males and 65 females; 48 Christians, 79 Muslims, and five Ss did not mention religious affiliation), enrolled in introductory psychology and sociology-anthropology courses at the American University of Beirut, with a mean age of 20.31 years.

All Ss stated that throughout the 1975-76 war in the country they remained in Lebanon all the time and their stand was one of the following: (a) *One-sided*—those Ss who stated that throughout the war they continuously favored one side and were against the other ($N = 59$; 34 males and 25 females; 24 Christians, 31 Muslims, four Ss not mentioning religion); (b) *Neutral*—those Ss who stated that throughout the war they had a continuously neutral stand ($N = 30$; 15 males and 15 females; 15 Christians and 15 Muslims); (c) *Against both sides*—those Ss who stated that throughout the war they were continuously against both sides in the conflict ($N = 43$; 18 males and 25 females; nine Christians, 33 Muslims, one S not mentioning religion).

2. Materials and Procedure

In addition to securing such background information on the Ss as age, sex, religious affiliation, and personal stand throughout the war, the questionnaire administered in regular classroom sessions consisted essentially of a series of four questions seeking information on the following:

on sources of information regularly sought, if any, for obtaining daily news during the war, as well as during the month preceding the date of taking the questionnaire (i.e., about four months after the armed conflict was officially declared to be over). Scores on this question could range from a minimum of zero to a maximum of eight sources, including both mass and personal media.

the side or sides, if any, from which the *S* obtained his daily news during the war, as well as during the month preceding the questionnaire. Responses included the following alternatives, regularly from both sides, mainly from one side and occasionally from the other, only from one side, and other (specify). Scores on this question could range from zero to 3, with 3 representing maximum nonselective exposure (i.e., regularly obtaining daily news from both sides) and zero representing maximum avoidance (i.e., avoiding all information from either side).

C. RESULTS

The two measures for testing the hypothesis were (a) the number of information sources to which the *S* reported that he exposed himself daily during and after the war, with scores varying from zero to 8, and (b) the side or sides, if any, from which the *S* daily reported that he obtained his information during and after the war, with scores varying from zero to 3. Regardless of the *S*'s stand, exposure to information was significantly greater during than after the war. For the "one-sided" subsample, the mean number of information sources was 4.19 during and 1.75 after the war ($t = 8.555$, $df = 58$, $p < .0005$). For the "neutral" subsample, the means were 4.20 during and 2.00 after the war ($t = 4.602$, $df = 29$, $p < .0005$). Finally, for the "anti-both sides" subsample, the means were 3.65 during and 1.63 after the war ($t = 6.427$, $df = 42$, $p < .0005$).

Furthermore, regardless of the *S*'s stand, exposure to both sides was significantly greater during than after the war. For the "one-sided" subsample, the means were 2.34 during and 1.91 after the war ($t = 2.913$, $df = 58$, $p < .005$). For the "neutral" subsample, the means were 2.67 during and 2.23 after the war ($t = 2.359$, $df = 29$, $p < .025$). Finally, for the "anti-both sides" subsample, the means were 2.49 during and 1.77 after the war ($t = 3.753$, $df = 42$, $p < .0005$).

D. DISCUSSION

The results are consistent with the hypothesis suggesting that the extent of exposure to information, as well as exposure to both sides, was sig-

nificantly greater during than after the war, regardless of the S's stand with respect to the warring factions. These results are in line with suggestions made by Freedman and Sears (1) and by Katz (3) on the "utility of information" as an important factor contributing to exposure preferences, proposing that "the greater the perceived utility of the information the greater will be the S's desire to be exposed to it" (1, p. 81). During the 1975-76 war in Lebanon, Ss were highly motivated to obtain regularly all available information about combat areas, location of snipers, kidnapping, and the like. Under such a condition, to be selectively informed may very well mean physical harm and possibly death. According to Janis and Rausch (2), the reverse of selective exposure is expected to occur under conditions requiring "vigilant concern about unfavorable consequences to be averted . . ." (2, p. 53), and what could be more unfavorable than the possibility of losing one's life?

The significance of the above results is even increased by recognizing the fact that while information sources emanating from the "other" side were usually accessible to all Ss, exposure to information from the "other" side sometimes carried its own risks and had to be exercised with great caution and even secrecy. Inside one's own home, one could always listen to the radio station of the "other" side without anyone else knowing about it. However, the same cannot be said about buying or reading or carrying a newspaper of the "other" side or about having a telephone conversation with a person from the "other" side. If it became public knowledge, then voluntary exposure to or contact with the "other" side might, as occasionally happened during the war, result in harm to the individual or his family.

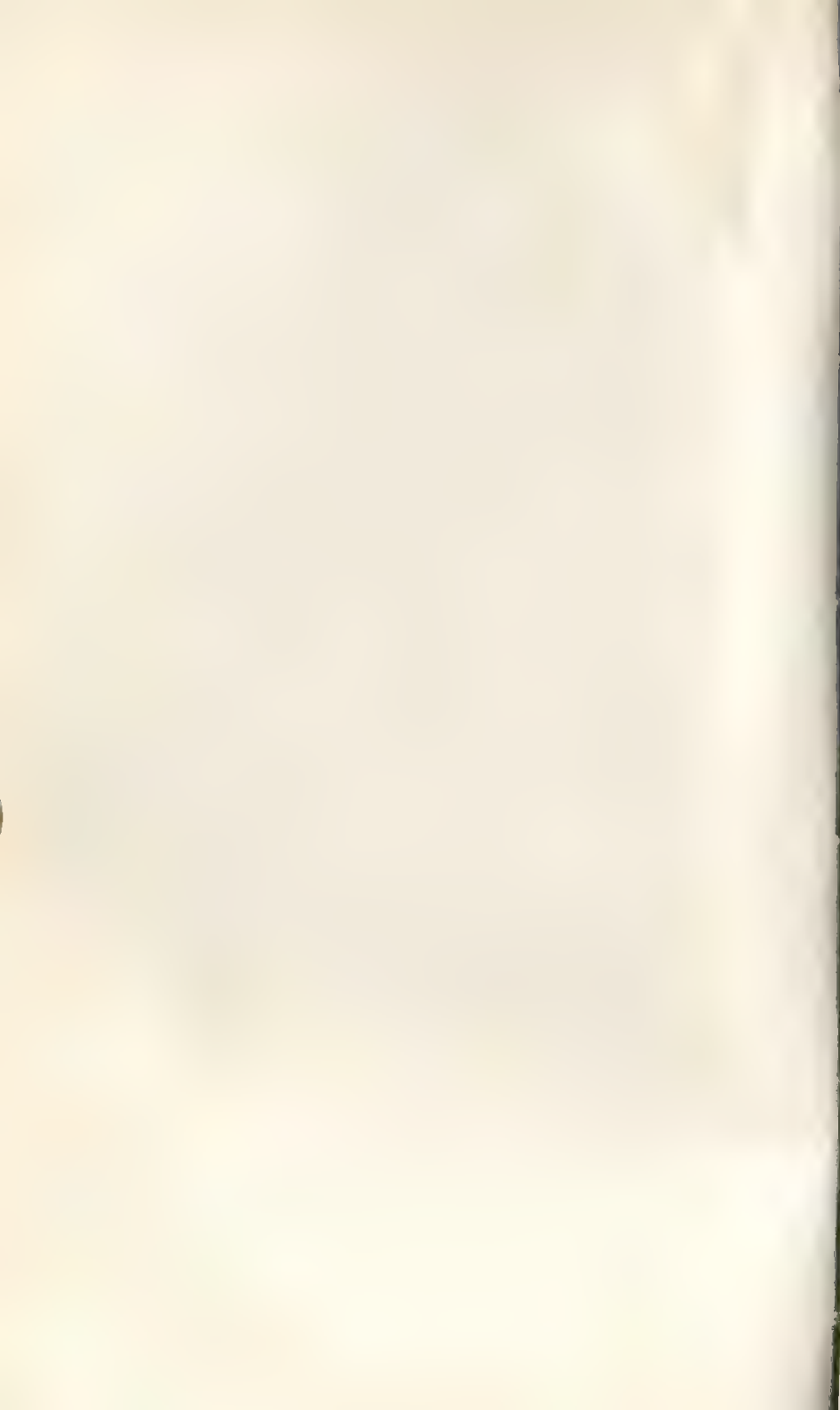
However, one limitation of the study has to do with the sample of Ss used which could not be considered as representative of the Lebanese population. A second limitation of the study is the possibility that during the war Ss had relatively more free time enabling them to be exposed to all kinds of information while after the war they were more preoccupied with their studies.

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THE EFFECTS OF STARING AND PEW INVASION IN CHURCH SETTINGS*

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SUMMARY

The agonistic effects of staring in human beings was tested in a field experiment. Confederates approached worshippers in six churches and attempted to "invade" the pew, with or without staring at the seated person at the end of the pew. The results of 98 invasions over 18 Sunday services revealed that invader staring increased the likelihood of a worshipper moving over or returning the gaze, the same worshippers rarely made both responses. Number of invaders did not influence moving or gaze return. The results are interpreted as yielding support and external validation for previous studies of the agonistic properties of the stare in Americans.

A. INTRODUCTION

Staring is widely known to serve as an agonistic display in higher primate species. Recent ethological studies conducted in North America and England suggest similar functions of the stare in human beings. For example, staring has been shown to increase the interaction distance of stare recipients (1) and to increase the speed of departure (7, 8, 9). Stare recipients, have rated starers as more dominant than nonstarers (2, 13) and have found the act of returning a starer's gaze to be aversive (6). These studies taken together support the position that the stare communicates threat among persons in The Western tradition. However, most studies have been conducted in laboratory surroundings. In the field studies, the situations involved staring at an automobile driver stopped at a stop light

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(7, 9), staring at a pedestrian at a stop light (7), and staring at Ss in an elevator (8). The present research was conducted to test the generality of the finding that staring has agonistic properties in humans. The setting chosen was the Sunday morning church service, because it provided a largely nonstudent sample covering a wide age range. Researchers approached worshippers seated at the ends of pews and attempted to take a seat in the pew, with or without staring at the seated person. Responses to staring during this pew "invasion" could be classified as flight (moving away from the invader several feet to make a space) or defiance (failure to move). On the basis of the studies mentioned above, it was hypothesized that invader stare would result in an increase in flight responses. When invader stare is not present, the *S* would be more likely to hold his (her) territory [in the sense of jurisdictional space; see Becker and Mayo (3)] and require the invader to step over to a space on the other side of the *S*. A secondary hypothesis was entertained that two invaders would present greater pressure on the *S* to move and would result in more moving responses. Underlying this hypothesis is the possibility that each invader exerts an influence on the *S* to give way, hence the cumulative pressure created by two invaders should be greater than that of either one alone. Indirect support for this hypothesis comes from the finding that pedestrians will avoid intruding between members of a group of people, more so the larger the group (4, 10).

B. METHOD

Six of the largest churches in a Kansas town of 50,000 persons were visited on three consecutive Sunday mornings by a team of eight confederates. All but one were male, all were white. Visits were made to 18 church services in which the number of persons in attendance varied from 30 to 500. The church memberships were predominantly white, middle-class. On a total of 98 occasions, a confederate (hereafter called an invader) "invaded," or took a seat in, an occupied church pew. A total of 98 Ss were invaded, 58% male and 42% female. Mean estimated age was 37 years ($SD = 18$ years).

During the 15 minute period before the start of a service, the invaders approached Ss who were seated at the end of a pew. Ss were chosen by standing at the back of the church and looking for persons seated at the end of a pew who had room to move over, making a space at the end for a newcomer. Most of the target persons were alone; a few were in couples.

When a suitable target was located, the confederate walked toward that pew to begin a trial. When the invader reached the pew on which the *S* was seated, he stepped into the pew as if taking a seat for the service. While doing so, he noticed whether or not the *S* looked at him and whether or not the *S* slid over to make room for him at the end of the pew. After one or two minutes, the invader stood up, stepped back into the aisle, and walked to the rear of the church to record his observations unobtrusively. He then located the next *S*, generally selecting someone in a different section of the church, and repeated the procedure. The main manipulation involved whether the invader looked at the *S*'s face while preparing to step into the pew. The second manipulation involved the number of invaders, either one or two. With two invaders, only the first one gazed at the *S* on the invader gaze trials. The order of conditions was varied so as to approximate randomization of treatment conditions. The dependent variables were whether the *S* slid over on the pew to make sitting space for the invader and whether the *S* stared at the invader's face. The *S*'s stare had to be an estimated half second or longer in duration; hence, a fleeting glance was not counted as *S* looking at invader.

Previous studies have shown that eye contact can be assessed with acceptable reliability (14). Since this study had the potential of being disruptive, or at least obtrusive, in the church setting, the investigators decided to minimize the contact with church members and check the reliability of the measurement process in a laboratory simulation. Five research assistants took turns in the roles of *S*s, invader, and observer. The invader's task was to take a seat without looking directly at the *S* and to use his peripheral vision to determine whether the *S* had looked at him (confirmed by the *S*'s self-report and the observer's judgment). In 20 trials, 100% agreement was obtained. Given these results, it was decided not to check reliability for the situation in which the invader looked directly at the *S*.

C. RESULTS AND DISCUSSION

The first hypothesis, which addressed the effects of attempted eye contact by the invader, was supported. The effect of invader gaze on *S* moving was tested on a total of 98 occasions. The invader's gaze was followed by the *S* moving over in 25 of 33 occasions. Invasions without attempted eye contact were followed by the *S* moving over in only 30 of 65 occasions. Thus, the invader's gaze appeared to increase moving from 46% to 76%, $\chi^2(1) = 6.63, p < .01$. The *S*s could also respond to the invader's gaze by

returning the gaze. The effect of invader gaze on return of gaze was tested on a total of 75 occasions.² The invader's gaze was returned by 11 of 12 *Ss* while invasion without invader gaze was responded to by the *S* staring at the invader in 34 of 63 occasions. Hence, invader gaze appeared to increase the likelihood of *S* looking at the invader from 54% to 92%, $\chi^2(1) = 4.50$, $p < .05$.

Since more *Ss* moved under the invader gaze condition, the investigators entertained a subhypothesis about those *Ss* who did not move. Perhaps they were more likely to return the invader's gaze as a display of defiance or counterthreat than were those people who did move. The results showed that for *Ss* who did not move, the invader's gaze was returned by six out of six *Ss*. When the invader avoided gaze, only 15 of the 34 *Ss* (who did not move) looked at the invader. Hence, invader gaze appeared to increase the frequency of *S* gaze from 44% to 100%, $\chi^2(1) = 4.34$, $p < .05$. Similar calculations for *Ss* who moved showed no significant relationship between invader gaze and *S* gaze. These results raise the possibility that invader gaze causes both more return gaze and more moving—but the same people do not do both. Some hold their ground and look back. Others move and do not look back. A defiant return gaze may substitute for a flight or appeasement response (moving). This result was unexpected in view of evidence from other sources that eye contact is nonnormative when persons are not conversing. For example, Coutts and Schneider (5) found that eye contact is avoided by persons not engaged in conversation (*Ss* waiting for an experiment to start).

Contrary to the second hypothesis the number of invaders was not significantly related to *S* moving. However, it is possible that the *Ss* did not see the second invader behind the first invader in most instances so that this manipulation may not have been effective. Analysis of the results by sex of *S* showed that the moving response to invader gaze was significant only for male *Ss*. Invader gaze increased the proportion of male *Ss* moving from 17 of 35 (49%) to 16 of 20 (80%), $\chi^2(1) = 4.01$, $p < .05$. It should be noted again that all invaders but one were male. Possibly the stare was more of a threat between members of the same sex than between members of different sexes. When broken down by estimated *S* age, the analyses showed only one significant relationship out of 39. This is interpreted as a chance finding. No clear findings emerged when the data were analyzed by pew section (front, second, third, and back sections of the church pews).

² For the first 23 invasions, *S*'s return of invader gaze was not recorded. Hence the *N* is different for the two dependent variables: 98 for *S* moving and 75 return of gaze.

Some estimate of the generality of the findings was possible by examining the results for each church separately. For three churches, the number of invasions was large enough to allow separate comparison of invader gaze with *S* movement. In two of these three churches, (Catholic and Methodist), invader gaze was associated with increased *S* moving ($p < .01$, $p = .08$). In the third church (Congregationalist), no significant relationship occurred. This finding suggests that the invader gaze effect has limited generality. Other factors, such as local norms, density, sex, and race of population may mediate the influence of staring.

The results of this study can be interpreted as yielding convergent support and external validation for previous studies of the agonistic properties of the stare in humans.³ However, another interpretation is possible. The stare may tend to strip one of anonymity and compel one to act in accordance with the apparent wishes of the starrer. Two field experiments have shown that hitchhikers are more successful in obtaining rides if they stare at the automobile drivers (11, 12). In the present study, the implied desire of the invader may be to have a seat at the end of the pew (the most convenient seat for the invader). The stare may simply elicit increased compliance by the *S*: i. e., increased moving.

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FACTORS AFFECTING THE BEHAVIOR OF DRIVE-UP BANK USERS^{1, 2}

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SUMMARY

The behavior of 537 male and female users of windows at a drive-up bank was investigated by observing (a) length of time spent approaching teller window, (b) whether machine or personal contact was chosen, (c) length of time spent at the window, and (d) characteristics of individuals in the vehicles. The results indicate that male drivers with same sex passengers had significantly ($p < .05$) faster approach lane time and window times than other groups. The drivers also tended not to use window lanes that were too far removed from the teller. The results are considered in terms of interpersonal contact of the driver with both the teller and passengers.

A. INTRODUCTION

Within the last few years, there has been an increased interest in the behavior of automobile drivers (e.g., 1, 2, 4, 6). The present investigation involved the behavior of drive-up bank users and the casual observation that these drivers tended to line up for interaction with a "live" teller, rather than interact with an "automated" teller.

B. METHOD

The Ss were automobile drivers who had turned into the approach lane of a drive-up bank in Hays, Kansas. This bank had the following three transaction lanes: (a) the driver interacted directly with the teller (placed transaction on window in front of teller—Direct transaction lane), (b) the

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driver interacted indirectly with the teller (placed transaction in plastic receptacle which was then automatically transported to the teller, but with visual contact—Visual Indirect transaction lane), and (c) the driver interacted indirectly with the teller (same as *b*, but had limited or intermittent visual contact—Limited Indirect transaction lane). All bank users were observed on two consecutive Friday afternoons between 1:30 and 4:30.

A driver was considered an *S* only if the following two criteria were met: (a) there were at least two vehicles in the Direct transaction lane when the driver entered the approach lane (this criterion equalized the length of time spent waiting before being served in any transaction lane), and (b) the driver did not pass a large, obvious money satchel to the teller (this situation usually indicated a business transaction which required direct teller contact). There were a total of 216 (127 males, 89 females) drivers who met these criteria and were included in the time analyses.

In addition to these 216 drivers, all patrons of the drive-up bank ($N = 537$; 315 males, 222 females) were classified in terms of gender and whether they were alone or with passengers. These classifications were used in assessing total window usage.

When a driver turned into the approach lane of the bank, one observer started a stopwatch while another observer recorded the sex of the driver and whether the driver was alone, with same sex, opposite sex, or different sex passengers. A group was defined as consisting of at least two, but no more than four passengers. At the end of the approach lane (approximately 15 yds), the watch was stopped, the time recorded (i.e., the approach lane time), and the selected interaction lane recorded. When the selected driver finished the transaction at a window, the window time was recorded (i.e., the time between coming to a complete stop at any window and starting to leave that window). This procedure was repeated until the end of the second observation day. There was no control for age of driver or passenger.

C. RESULTS

In an attempt to assess total usage of the three interaction lanes, frequency counts were analyzed by χ^2 test. The results indicated a significant difference between the three lanes in terms of total usage, $\chi^2(2) = 6.58$, $p < .05$. There was no difference between the Direct and Visual Indirect transaction lanes (37% and 35%, respectively), but there was a tendency for drivers not to use the Limited Indirect transaction lane (28%).

In assessing total usage between male and female patrons, a χ^2 test for

sex and interaction lane was calculated. The results indicated that there was no significant difference between the sexes in lane usage.

When the social condition (alone or with passengers) and interaction lane (direct or indirect) analyses were considered, a highly significant relationship was found, $\chi^2 (1) = 325.39$, $p < .001$, with drivers with passengers disproportionately using the indirect interaction lanes.

The classification procedure described previously resulted in a 2×4 design for the approach lane time, with sex of driver and passenger condition as independent variables. For this measure, a completely randomized factorial (CRF-24) ANOVA (5) indicated a significant main effect for sex, $F (1,208) = 4.94$, $p < .05$, with males having faster times than females. A significant sex \times conditions interaction also resulted, $F (3,208) = 2.71$, $p < .05$, which, with specific comparisons, indicated that male drivers with same sex passengers had significantly faster approach lane times than did male or female drivers who were alone, and female drivers with same sex passengers. No other comparisons were significant.

For the window time, the classification procedure added the additional independent variable of interaction lane, which resulted in a $2 \times 3 \times 4$ design. The ANOVA [CRF -234 (5)] for window time also revealed a significant sex \times conditions interaction, $F (3, 192) = 2.98$, $p < .05$, with males with same sex passengers having faster window times than females with same sex or different sex passengers. No other comparisons were significant.

D. DISCUSSION

The casual observation which prompted this study, that bank customers seemed to prefer a "live" rather than an "automated" teller, is partly borne out by these data. In general, the drivers tended to avoid the Limited Indirect transaction lane. The Limited Indirect transaction lane is both the most distant from the teller and provides the least amount of visual contact with the teller. Since both eye contact (3) and physical distance (7) have been shown to be related to interpersonal attraction, we presume that the chosen lanes are used more frequently to maintain the level of trust necessary for customer satisfaction.

On the other hand, drivers with passengers behaved differently from other bank customers. They tended to make disproportionately high use of the indirect lanes. Further, male drivers with male passengers had both speedier approaches to the transaction point and quicker transactions. It seems likely that drivers with passengers may mitigate personal space

needs with the teller in the service of personal space with the friends or acquaintances in the car. Specifically, the indirect transaction lanes, compared to the direct lane, minimize the ratio of distance to friends (their passengers) divided by distance to a stranger (the teller). Further, the indirect lanes allow continued privacy of any conversation in the car. The speedier transactions of male drivers with male passengers may be a consequence of either task or social factors. These drivers may be making transactions requiring minimal bank processing time, such as cashing payroll checks or withdrawing money. Yet, this explanation would not account for the temporal difference between male drivers with passengers *versus* male drivers traveling alone. It is more likely that these differences are not situation-specific and are examples of male driving behavior well known to automobile insurance actuaries.

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ECOLOGICAL AND NEGOTIATION PROCESSES IN NEW YORK SUBWAYS*

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SUMMARY

Most investigations of subway behavior fall into either of two theoretical approaches. The first is the ethological approach which seeks to explain human behavior as the result of environmental stimuli, the second is the dramaturgical approach which lodges its explanations in interpersonal and situational processes. Both approaches, however, assume that subway systems are of a heterogeneous composition that is essentially formless. Data relevant to this assumption were collected through direct observations of 455 racial and sexual seating relationships on the IRT and IND lines of the New York City subway system. Statistically significant differences were found which demonstrate the existence of patterned seating behavior. It is concluded that the physical environment of subway cars does indeed structure conduct, but that these settings are situationally transformed as well. These results inform a theoretical discussion of environmental constraint and situational transformations in terms of the ethological and dramaturgical approaches. Negotiation theory, which emphasizes the interplay between structure and process, is suggested as an alternative theoretical formulation.

A. INTRODUCTION

While there has been a range of substantive investigations of human behavior in subways (17), most studies have tended to gravitate toward one or another of two quite dissimilar theoretical approaches. These are the ethological approach represented by the work of Fried and DeFazio (8) and the dramaturgical approach represented by the work of Levine *et al.* (13). The ethological approach conceives of environment as a stimulus factor capable of taking on different characteristics, such as proximity or density.

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These environmental factors are then considered as causal forces exerted on organisms exposed to them, and behavior is explained in terms of these objective environmental factors. The dramaturgical approach conceives of environment in much more benign terms. Actors find themselves located in the presence of others, and as they engage in the process of presenting and maintaining selves, they manipulate the elements of the situations in which they are called upon to act. Environmental factors, therefore, are important only insofar as they are phenomenologically experienced and brought into interaction processes.¹

While each of these contrasting approaches has its own particular merit, they share a fundamental underlying similarity when used in research on subways insofar as each fosters the view that subways are formless systems of mass heterogeneity. Environmental differentiation is thought of as being equally experienced by all passengers, and as such it is regarded conceptually as a single, homogeneous phenomenon and methodologically treated as a single variable—usually a background variable. Fried and DeFazio accurately note, for example, that “. . . all races and religions and most social classes are confronted with one another . . .” in the subway and with “*the same situation*” [(8, p. 50), emphasis added]. Subway heterogeneity, which these authors explicitly regard as “natural randomness,” is seen to face the inflexible physical dimensions of subways, which are regarded as constituting a universal situation for all passengers. In contrast to this objective environment stance is that taken by Levine *et al.* (13). While they do discuss various elements of subway heterogeneity, they never define it and thus fail to indicate the nature of the environment of which those heterogeneous elements are a part. Thus, they define subway environment by default, it does not exist except insofar as it is subjectively taken into account by the passengers.

The theoretical position adopted in this paper differs from both of these orientations and is grounded in the contention that both social environments and individual action are channeled through processes of ongoing negotiation.² Indeed, research has shown that both *who* and *where* we are in social terms are never fixed once and for all, but are joint outcomes of the interaction between personal activity and the settings in which that

¹ For a recent and fairly comprehensive collection of works illustrating the dramaturgical approach, see Brissett and Edgley (5). The objective environmental approach is illustrated by the work of Bandura (2) and Mischel (18), and the subjective environmental approach is illustrated by the work of Schegloff (20). Additional discussion of the subjective approach is found in Jessor (11), and an attempt at a synthesis can be seen in Jessor and Jessor (12).

² For a general discussion of negotiation, see Strauss (21).

activity takes place (7, 15). While it is true that settings "provide for those involved a similarity of circumstance for action" (14, p. 16), they are never exactly the same for all participants (6, p. 3-22). This is especially true of public settings, such as subways, for while there is no question that there is freedom of access for all, the settings themselves are somewhat more ambiguous regarding permissible behavior (16). In this connection, settings and setting features are extremely significant because they provide a measure of structure to the social situations which form within them and therefore become intimately involved in processes of constraint (1). They become, in Becker's terms (4), committing elements insofar as the actor's alternatives are limited.

Although the notion of commitment has not been used in analyses of subways [but see Geer (9) and Gerson (10) for fruitful applications to other areas], it is useful as a conceptual mechanism for analyzing the structuring impact of environmental settings on action, as well as the differential meanings that setting features can have for actors. In other words, while environments give shape and direction to interaction patterns, they are not totally deterministic because of the negotiative interplay between setting features and the meanings that actors in the setting impute to them. Thus, the "objective" environment and "subjective" definitions are brought together as phases of one overall process. The physical dimensions of environments are not altogether constraining because they can be denied; yet the actor is not totally free merely to select out which environmental features to act towards.

The position just outlined can be seen as a theoretically practical approach to the study of subway environments. The purpose of this paper is therefore twofold: to present data demonstrating the viability of that position and, in so doing, to establish an empirical basis for discussing the tenability of the assumption of mass heterogeneity as a feature of the subway. The two are logically connected, since the assumption of mass heterogeneity is emergent from the overly objectified ethological approach and the overly subjectified dramaturgical approach.

B. METHOD

The substantive interest of this paper is in racial and sexual seating patterns as responses to different types of seating equipment. Racial and sexual characteristics were selected as dimensions of heterogeneity because they represent conventional mechanisms used by persons in anonymous

urban settings to identify others (15), and, in the course of collecting the data, they showed the highest degree of intercoder reliability (.94 for race and .99 for sex). Seating equipment was selected as a salient environmental feature of the subway setting.

Samples were drawn from New York City's Lexington Avenue IRT line which runs north and south in Manhattan and into the Bronx and the IND "A" line which goes east out of Manhattan into Queens. The data were gathered largely in the summer of 1974, and are based on direct observations. Since passengers were continually getting on and off the cars, a strict random sample could not be obtained. Therefore, as a means of systematizing the sampling procedures, alternate cars were selected as sampling sites and every person in the car was included in the sample. Each of two observers coded each passenger, and two round trips were taken on each line—one at mid-morning and one at mid-afternoon. Since we were interested in seating choice, rush hours were avoided because with the dense crowding there are few seating choices to be made. Sampling from nonrush hours also was found to be methodologically advantageous in previous subway studies (8, 19). Since the riders of one line are unlikely to use the other line (they service different parts of the metropolitan area), it is assumed that the samples are independent of one another.

The IND and IRT systems were selected because they contain different physical seating arrangements. The IRT cars contain two long benches along the sides of the car, each capable of seating eight passengers, and four shorter benches capable of seating two passengers each. Thus, all seating arrangements are of a linear, side-by-side nature. The IND cars have two-passenger seats and are arranged to form a "L-shape" arrangement: for every two-seater which is perpendicular to the wall of the car, there is a two-seater in front of it which is parallel to the wall. This arrangement presents a very different situation from that on the IRT because there are corners. An IND passenger can have someone sitting not only beside him, but also in front of him. Type of seating equipment—straight line bench or L-shaped two-seaters—therefore constitutes the independent variable.

The dependent variables are race and sex. In coding these two characteristics, we were interested in *seating relationships* rather than individuals *per se*. To illustrate the distinction, suppose that *a* and *b* are sitting next to one another. In the procedure we used, they would be coded as constituting one seating relationship, *ab*. Had we coded them as individuals, there would have been two relationships, *ab* and *ba*. Since our concern was with

the objective racial and sexual characteristics of seating relationships, coding individuals would have artificially increased our sample.

The substantive purpose is therefore fairly straightforward—to determine whether or not a relationship exists between type of equipment and racial or sexual seating patterns. This being the case, the chi square test was deemed sufficient to indicate the presence or absence of such a relationship, and Pearson's contingency coefficient (C) was used as a measure of strength. Observations of the behavior of the passengers while seated constitute an additional source of data, and will be introduced in the Discussion section in order to assist in interpreting the main body of data.

C. RESULTS

Data concerning the distributions of riders on each line (not shown here) indicate that the proportion of blacks exceeds that of whites and males outnumber females. These distributions are consistent with results reported in previous studies of New York subway riders. What is important, however, is that the distributions on the two subway lines are not statistically significant, which means that seating patterns are not likely to be the result of racial and sexual distributions themselves.

Table 1 shows the distribution of all possible racial and sexual seating relationships on the IRT and IND lines. The data indicate that racially homogeneous relationships were more likely to occur on the IND line which has the L-shaped seating arrangements than on the IRT containing the straight line seating arrangements. Blacks were more likely to sit with blacks, and whites were more likely to sit next to other whites when presented with seating arrangements with corners in which they could face one another ($\chi^2 = 8.674$, $C = .137$, $p < .02$). The data concerning sexual seating relationships indicate that while heterogeneous relationships occurred with about equal frequency on both lines, males were more likely to sit together on the IRT, while females were more likely to sit together on the IND ($\chi^2 = 34.55$, $C = .266$, $p < .001$).

D. DISCUSSION

The substantive focus of this report has been the determination of racial and sexual seating relationships as responses to different types of seating equipment in the subway. The data clearly indicate that seating relationships were not random, but were patterned along both racial and sexual lines. This patterning is sufficient to call into question the assumption of formless, mass heterogeneity made in previous studies of subway behavior.

TABLE 1
SEATING RELATIONSHIPS ON THE IND AND IRT LINES BY RACE AND SEX

Seating relationships	IND		IRT		Totals
	N	%	N	%	
Race					
Black-Black	116	42.6	69	37.7	185
White-White	75	27.6	36	19.7	111
Black-White	81	29.8	78	42.6	159
Totals	272	100.0	183	100.0	455
Sex					
Male-Male	41	15.1	68	37.2	109
Female-Female	114	41.9	41	22.4	159
Male-Female	117	43.0	74	40.4	191
Totals	272	100.0	183	100.0	455

Certainly subway environments are composed of a high degree of differentiation, but this point is not and never was at issue. What is at issue is the unwarranted assertion, made either explicitly or implicitly, that such differentiation fails to display any sort of configurations.

It is my contention that this failure is in part a function of the theoretical presuppositions of the ethological and dramaturgical approaches. Neither considers both environment and social interaction as ongoing dialectical processes with each contributing to the formation of the other. The deterministic assumptions of ethology must deny individual volition and creativity, and the excessive indeterminacy of the dramaturgical perspective must deny any constraint "external" to the actor.

What the data indicate is that different types of seating equipment—the "same situation" in Fried and DeFazio's view—were socially transformed by passengers. In this transformation—i.e., differential patterns of use—one outcome was that males and females and members of different racial groups were not faced with the same situation at all. Physical equipment does not constitute or produce the same situation for all racial and sexual aggregates. The equipment is there as a setting feature and is invariable in its physical form, but it becomes altered in its social form as patterned meanings are attributed to it. Yet, these meanings and the situations created by their patterning are not outcomes of actors freely engaging in processes of individualistic reality construction. The L-shaped seats on the IND provide the structuring circumstance for the creation of homogeneous seating relationships. They structurally commit passengers to these relationships once the situations are formed. It is through these structuring processes, then, that environment makes its effect felt. While granting that

situations are social outcomes, the kinds of situations that emerge are formed in some environmental context that gives a particular form to those situations.

One final set of observations should be introduced here that partially qualifies the tabular data. We observed that conversations tended to take place more frequently in homogeneous relationships on the IND than on the IRT. This was especially true for IND female passengers. When passengers were not engaged in conversation, other forms of behavior similar to those discussed by Levine *et al.* (13) were frequently observed. A typical IND avoidance tactic, for instance, is what we termed "aisle legs"—extending the knee or leg into the aisle of the car. These observations seem to indicate that not all homogeneous relationships are the same, but represent patterns formed through different processes. Some represent friendship relationships in which passengers take advantage of the L-shape seating arrangements to form conversational situations, while other homogeneous relationships were composed of strangers engaging in avoidance behavior and in which the norm of civil inattention applies. These data suggest the existence of subpatterns which lend further support to the negotiation perspective advocated in this paper. It is evident that not only race and sex serve as filters for seating choice, but also that differential seating equipment provides the environmental structure in which friendship situations can be formed. It cannot be said that the equipment "causes" the situations because it is clear that quite different situations are formed as responses to the same setting features.³ What can be said is that previous situations commit actors to certain lines of conduct which include the probability that setting features will be used in certain ways. Race and sex function as elements of commitment in the process of seating choice; but previous situations of friendship further commit passengers to certain behaviors which add detail to the transformation of setting features into situations.

There are two main conclusions in this paper. One is that the negotiation perspective has been shown to be useful in the analysis of environments and behavior. Indeed, if that or any other perspective is to refer to generic processes, its applicability to a range of substantive areas must be demonstrated. The other conclusion is that the assumption of mass heterogeneity as a feature of the subway has been called into question. While this paper

³ A standard and quite useful work on settings has been Barker and Wright (3), but even they overlook the distinctions between settings and situations. See Ball (1) for some excellent differentiating suggestions.

deals with only two elements of that heterogeneity, the implication is that the assumption is conceptually risky and can lead to inappropriate portrayals of relationships between interaction and environmental conditions in subway settings.

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TYPE OF TASK AND STUDENT ACHIEVEMENT AND ATTITUDES IN INTERPERSONAL COOPERATION, COMPETITION, AND INDIVIDUALIZATION*¹

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SUMMARY

The effects of interpersonal cooperation, competition, and individualization were compared on drill-review, problem-solving, specific-knowledge acquisition, and specific-knowledge retention instructional tasks. Sixty-six fifth graders were included in the study. Males and females were assigned randomly to conditions so that within each condition there were 22 Ss and an equal number of males and females. The results indicate that cooperation generally produced more positive attitudes than did either individualization or competition. Cooperation resulted in higher achievement than did competition and individualization on both the problem-solving and retention tasks, higher achievement than competition and just as high achievement as individualization on the drill-review task, and higher achievement than individualization and just as high achievement as competition on the specific-knowledge-acquisition task.

A. INTRODUCTION

There are three types of interpersonal goal structures that can be implemented in the classroom: cooperation, competition, and individualization. In a *cooperative* learning situation student goal achievement is positively correlated; when one student achieves his goal all students with whom he is cooperatively linked achieve their goals (4, 5). In a *competitive* learning situation student goal achievement is negatively correlated; when one student achieves his goal all other students with whom he is competitively linked fail to achieve their goals (4, 5). In an *individualistic* learning

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situation student goal achievement is independent; the goal achievement of one student is unrelated to the goal achievement of other students (4, 5). These three interpersonal goal structures greatly influence the way in which students interact with each other and with the teacher, which in turn affects students' achievement and attitudes.

There has been considerable research, largely from Western culture, comparing the relative effects of the three interpersonal goal structures on achievement and productivity. These studies have, however, found conflicting results. A number of studies have found that interpersonal competition results in more productivity and higher achievement than does interpersonal cooperation (see 4, 9, 8). There are other studies which have found that interpersonal cooperation results in more productivity and higher achievement than does interpersonal competition (see 4, 9). Interpersonal competition has been found to produce higher immediate achievement than does individualization (1, 11), but retention of material learned is not significantly different when measured 2½ weeks later (2). Interpersonal cooperation has been found to produce consistently higher daily achievement than does individualization, cooperative groups have been found to score higher on retention tests than do individualized students, and when all students take a retention test individually, no significant differences are found between cooperative and individualized conditions (7, 6). Thus, there is inconsistent evidence concerning the comparative effects of interpersonal cooperation and competition, and consistent results indicating that both interpersonal cooperation and competition produce higher immediate achievement than does individualization.

One way in which the conflicting findings of the previous research can be reconciled, while at the same time making the theory concerning goal structures more precise, is by hypothesizing that there is an interaction between type of task and goal structure. The present study is an attempt to determine the type of task on which each goal structure will promote higher student achievement than the other two. From analysis of the tasks used in the previous research, it may be hypothesized that interpersonal cooperation will result in higher achievement than will competition and individualization on problem-solving and retention tasks and lower achievement on drill-review and specific knowledge acquisition tasks. Competition is hypothesized to promote higher achievement on the drill-review task than will individualization or cooperation, and individualization is hypothesized to promote higher achievement on specific-knowledge-acquisition tasks than will either competition or cooperation.

B. METHOD

1. Sample

The sample consisted of three 5th-grade classes from a large, urban elementary school in a large Midwestern city. Sixty-six Ss were included in the study, 32 males and 34 females. The Ss were all from middle-class and lower-middle-class backgrounds. Males and females were randomly assigned to conditions so that within each condition there were 22 Ss and a nearly equal number of males and females.

2. Independent Variables

Two sets of independent variables were included in the study: (a) cooperation, competition, and individualization and (b) drill-review, problem-solving, specific-knowledge-acquisition, and specific-knowledge-retention instructional tasks. Ss were assigned to either the cooperative, competitive, or individualized conditions. Those in each condition then participated in three 60 minute instructional sessions involving the four instructional tasks. The instructional sessions were randomly assigned to days. On the first day all three conditions participated in the drill-review task, on the second day all three conditions participated in the problem-solving task, and on the third day all three conditions participated in specific-knowledge-acquisition and retention tasks.

The conditions were structured according to the procedures presented in Johnson and Johnson (5). In the *cooperative* condition, males and females were randomly assigned to groups of four or five Ss, so that there were three groups of four with two males and two females in each group and two groups of five, one with three males and two females and one with two males and three females. Ss were instructed to work together as a group, completing one assignment sheet for their group, with all members sharing materials and ideas and helping each other to find the answers, making sure all members were involved and understood the answers, and with the teacher praising and rewarding the group as a whole on the basis of the group score, seeking help and clarification from each other rather than from the teacher.

The *competitive* condition was structured to maximize the likelihood that the constructive and appropriate use of competition would be demonstrated. Ss were randomly assigned to seven clusters, six clusters of three Ss and one cluster of four Ss. Each cluster was randomly assigned a number from 1 to 7. Ss were instructed to compete within each cluster for

1st, 2nd, 3rd, and (in one case) 4th place. Twice during the first session and at the end of the 1st and 2nd instructional sessions the winners from each cluster were moved to the next highest cluster and the last-place Ss in each cluster were moved to the next lowest cluster. The moving to new clusters was desirable to establish homogeneous ability groups and maintain Ss' perception that each had a reasonable chance of winning. On each day winners faced a more challenging situation and nonwinners faced a more equitable situation. Students were instructed to attempt to win in their cluster, to begin only when the teacher said "go," to stop when the teacher said "stop," to exchange papers across clusters and score the number of correct answers, and then to determine the ranking from 1st to last place within each cluster. While they were working, they were instructed to work on their own, avoiding interaction with other students, seeking help and clarification from the teacher. The teacher would provide public feedback as to Ss' progress by announcing every two or three minutes the number of items leading Ss had completed. This allowed all Ss to compare their progress with the leaders so that they could speed up their work accordingly. The teacher praised and rewarded Ss who won in each cluster and clarified rules and instructions when needed.

In the *individualistic* condition, Ss were instructed to work on their own, avoiding interaction with other Ss, seeking help and clarification from the teacher, and with the teacher praising and rewarding each S individually. Ss were instructed to work at their own pace doing as much of the assigned task as possible in the time allowed.

For the three weeks prior to the study the Ss had experienced each of the goal structures. They spent a week learning cooperatively, a week learning competitively, and a week learning individualistically. Thus all Ss were familiar with the procedures of each condition. The three teachers who participated in the study had received an intensive 30 hours of training in the use of the three goal structures and had taught each goal structure for one week in the three weeks prior to the study. Thus the teachers were familiar with the procedures of each condition.

The four instructional tasks consisted of a drill-review task on material previously learned, a problem-solving task dealing with new material, a specific-knowledge-acquisition task dealing with new material, and a retention-test on the material in the specific-knowledge-acquisition task. The *drill-review task* was a math review using 26 two-place multiplication problems from the Scott Foresman Math Series, 4th level. All Ss had learned two-place multiplication several months previous to the study and

had consistently been drilled on the use of two-place multiplication for several months. The *problem-solving task* was a version of the Rasmussen Triangle (10), a diagram containing an ambiguous number of triangles. Ss were given several sheets on which there were six drawings of the same diagram. They could have as many of the sheets as they wanted. Ss were instructed to shade in with their pencil one triangle on each diagram until they had shaded in all the possible different triangles contained within the diagram without repetition. The task included the learning of the concept "triangle," the reorientation of visual perception to include small, previously identified triangles within a larger new triangle (combining of parts), the discrimination of triangles from nontriangles within the diagram, and the keeping track of triangles previously identified so that the same triangle was not counted more than once.

The *specific-knowledge-acquisition task* was the first three chapters of a programmed-learning booklet published by Coronet Films (3). The programmed materials focused on dividing words into prefix and root, introducing the root or prefix to be learned (i.e., Mis is a prefix meaning wrong, wrongly, bad, badly), and then requiring the S to interpret a word using the root or prefix (i.e., Misbehavior means ? behavior). All the words in the materials were new to the Ss. The assigned material covered about 15 pages, five pages per set, with approximately seven questions on each page.

The *specific-knowledge-retention task* consisted of a test on the roots and prefixes covered in the specific-knowledge-acquisition task. It was given immediately after Ss had stopped work on the programmed materials at the end of the period.

3. *Dependent Measures*

At the end of each instructional period Ss handed in their work sheets from which their achievement scores were derived. They then were tested individually on their perceptions of and preferences for the goal structure they worked within and their attitudes toward each day's learning experiences. The first instrument was adapted from the Student Perception Questionnaire in Johnson and Johnson (5) and consisted of three questions in a multiple choice format. The initial question dealt with student perceptions of the goal structure they were in during the instructional session. The second question dealt with whether Ss preferred the goal structure experience or another one. The third question dealt with whether or not Ss felt that they would learn the most from the assignment by doing it within the goal structure they experienced.

The attitude questionnaire consisted of seven adjective pairs at opposite ends of an eight-point scale. The positive and negative words in each adjective pair were assigned randomly to the left side of the scale. The scales were scored from zero to 7.

4. Procedure

The procedure for each day was as follows. Ss went to their appointed classroom. The teacher explained the task for the day as well as the goal structure. Ss worked on the task with the teacher fulfilling the needed teacher behaviors for each goal structure. At the end of the session the teachers collected the achievement-related materials. Ss then met in an open area adjacent to the three classrooms for the administration of the two tests. Ss were dismissed and sent to their regularly scheduled gym class.

5. Analyses

A 1×3 analysis of variance with Newman-Keuls *post hoc* comparisons among means was used to analyze the data. For the achievement results, where groups of students in the cooperative condition handed in one set of answers for their group, the number of groups was used as the *n*. Since there is disagreement among statisticians as to whether groups or individuals should be used in analyzing such results, the analysis was run both ways. Only on one task were the results of the two analyses markedly different. For the attitude measures, which all Ss took individually, a multivariate ANOVA was first conducted, followed by analysis of variance on each attitude item when the multivariate *F* was significant.

C. RESULTS

Two observation schedules and a questionnaire were used to ensure that the goal structures were implemented appropriately and were perceived accurately by students while they worked on the learning tasks. The results indicate that the classroom organization, student-student interaction, and teacher-student interaction were appropriate 100 percent of the time, that almost all student behavior was task-oriented during the experiment, and that students accurately perceived the goal structure being implemented by the teacher. Students were also asked to indicate which goal structure they would have preferred to work within for each task; over 80 percent of the students in the cooperative conditions preferred a cooperative goal structure, while only about 33 percent of the students in the competitive condi-

tion and 25 percent of the students in the individualistic condition preferred their goal structure.

The major dependent variable is achievement. From Table 1 it may be seen that on the drill-review task, Ss in the individualistic and cooperative conditions achieved more than did Ss in the competitive condition. On the problem-solving task, Ss in the cooperative condition achieved more than did the Ss in the competitive and individualistic conditions, and Ss in the competitive condition achieved more than did the Ss in the individualistic condition. On the specific-knowledge-acquisition task, Ss in the cooperative and competitive conditions answered more programmed items correctly than did the Ss in the individualistic condition. On the specific-knowledge-retention task, there were no significant differences among conditions when the data were analyzed with the use of the number of cooperative groups as the n in the cooperative condition. However, when the number of Ss was used as the n in the cooperative condition, Ss in the cooperative condition were found to achieve at a higher level than did the Ss in the competitive or individualistic conditions ($F = 5.92, p < .01$). When t tests were conducted between the cooperative and competitive, and the cooperative and individualistic conditions, both tests were only marginally significant. Thus, the results for the knowledge-retention task are or are not statistically significant, depending on the method of analysis used.

The percentage of erroneous answers given on each task was obtained by dividing the number of incorrect answers by the total number of answers attempted. From Table 1 it may be seen that Ss in the cooperative condition made no errors on the drill-review, problem-solving, and knowledge-acquisition tasks, while the Ss in the competitive and individualistic conditions made considerable errors on all three tasks. The only marked difference between the competitive and individualistic conditions was on the problem-solving task where Ss in the individualistic condition made over twice the percentage of errors of the Ss in the competitive condition. On the knowledge-acquisition task Ss in the cooperative condition made a much smaller number of errors than did the Ss in the competitive or individualistic conditions.

On the problem-solving task a further analysis was conducted to determine the quality of the Ss' solutions in each condition. The correct solution to the task is 18. The task was structured, however, so that a superficial analysis would result in the solution of 8 or below. Seventy-three percent of the Ss in the individualistic condition gave the superficial answer, 33 percent of the competitive Ss gave the superficial answer, while none of the

TABLE 1
MEAN SCORES ON ACHIEVEMENT AND PERCENTAGE OF ERRONEOUS
ANSWERS GIVEN ON LEARNING TASKS

Task	Cooperative			Competitive			Individualistic			F
	Mean	SD	%	Mean	SD	%	Mean	SD	%	
Drill-review	11.60	2.57	0	7.46	4.39	37	13.81	6.61	33	6.74
Problem-solving	15.20	2.40	0	12.50	4.31	27	7.91	1.56	57	14.13*
Knowledge-acquisition	18.60	3.00	0	21.83	9.05	12	14.75	6.24	19	4.17*
Knowledge-retention	7.00	2.36	36	4.47	2.76	59	4.74	2.59	55	1.73

* $p < .05$

** $p < .01$.

cooperative groups gave the superficial answer. In the cooperative condition, two groups (nine Ss) solved the problem correctly, while not one S in either of the other two conditions did so.

All Ss were asked to complete an attitude questionnaire individually to provide data concerning their reactions to the instructional tasks and sessions (see Table 2). The multivariate analysis of variance found a significant difference among conditions ($F = 2.64$, $p < .001$) for the drill-review session. Ss in the cooperative condition felt that the task was more comfortable and relaxed than did the Ss in the competitive condition. Those in the cooperative condition felt more included than those in the individualistic condition. Those in the individualistic condition felt more comfortable and relaxed than those in the competitive condition. Those in the competitive condition felt more included than those in the individualistic condition.

For the problem-solving session, the multivariate analysis of variance found a significant difference among conditions ($F = 2.04$, $p < .01$). Ss in the cooperative and individualistic conditions felt the task was shorter, easier, more comfortable, more relaxed, and more facilitative of learning than those in the competitive condition. Those in the cooperative condition felt that the task was more enjoyable than did the Ss in the competitive condition.

The multivariate analysis of variance for the knowledge-acquisition and retention session found a significant difference among conditions ($F = 3.00$, $p < .001$). The data in Table 2 indicate that Ss in the cooperative and individualistic conditions felt that the tasks were more enjoyable and more relaxed than those in the competitive condition. Those in the cooperative condition felt that the task was easier and less lonely than those in the competitive condition.

TABLE 2
MEAN RESPONSES FOR ATTITUDES TOWARD THE TASKS

Adjective pairs	Cooperative		Competitive		Individualistic		F
	Mean	SD	Mean	SD	Mean	SD	
Drill-review							
Long-short	4.55	1.18	4.23	1.57	4.10	1.37	n.s.
Hard-easy	5.86	1.35	4.55	2.04	5.19	1.47	3.50*
Not enjoyable-enjoyable	4.82	1.84	3.96	2.19	5.10	1.48	2.20
Frustrated-comfortable	5.18	1.53	4.14	1.98	5.38	1.28	3.66*
Upset-relaxed	5.23	1.90	3.68	1.58	5.62	1.49	8.13**
Lonely-included	5.55	1.79	5.18	1.94	3.86	1.71	5.09**
Learned little-much	3.18	1.50	3.09	1.99	3.95	1.49	n.s.
Problem-solving							
Long-short	4.91	1.54	3.64	1.49	5.67	1.49	9.95**
Hard-easy	5.46	1.73	4.18	2.23	5.86	1.49	4.82**
Not enjoyable-enjoyable	5.36	1.39	4.05	2.25	5.10	1.41	3.51*
Frustrated-comfortable	5.73	1.61	4.32	2.03	5.91	1.48	5.52**
Upset-relaxed	5.82	1.70	4.09	2.15	6.10	1.41	8.00**
Lonely-included	5.59	1.73	4.32	1.98	4.95	1.88	2.55
Learned little-much	4.41	1.73	3.14	1.78	4.14	1.90	3.03*
Knowledge acquisition and retention							
Long-short	3.84	2.06	3.26	1.96	3.05	1.77	n.s.
Hard-easy	5.42	1.53	3.79	2.20	4.37	2.11	3.34*
Not enjoyable-enjoyable	4.47	1.71	2.37	1.96	3.74	1.97	6.07**
Frustrated-comfortable	4.95	1.98	3.89	2.40	4.05	1.58	n.s.
Upset-relaxed	5.74	1.75	2.89	1.91	4.90	2.07	10.97**
Lonely-included	5.58	1.67	3.53	2.19	3.95	1.77	6.21*
Learned little-much	3.47	2.24	3.58	2.09	4.79	1.47	2.63

Note: The higher the mean, the higher the achievement.

* $p < .05$.

** $p < .01$.

D. DISCUSSION

The generalization of the findings of this study is limited by the size and nature of the S population and the specific operationalizations of the three interpersonal goal structures and the nature of the instructional tasks. In this study an attempt was made to implement each of the three goal structures in as constructive and effective way possible, based upon the procedures used in previous studies. In most classrooms interpersonal competition and individualization may be structured more diffusely and ambiguously than they were in this study. Given these limitations, the results of this study have several important implications for both theory and practice.

As hypothesized, interpersonal cooperation did result in higher achievement than did competition or individualization on the problem-solving and

specific-knowledge-retention tasks. Contrary to the hypotheses, however, cooperation promoted higher student achievement than competition on the drill-review task and higher achievement than individualization on the programmed-learning task. On the four instructional tasks included in the study there are no instances of interpersonal cooperation resulting in lower achievement than did competition or individualization. While it was expected that the student-student interaction inherent in the interpersonal goal structure would require cooperative groups to work more slowly than students in competitive and individualistic goal structures on the drill-review and specific-knowledge-acquisition tasks, the zero error rate found in the cooperative condition on these tasks indicates that students may have used their time more effectively when studying cooperatively than competitively or individualistically. Since several of the previous studies that found interpersonal competition to outperform cooperation used tasks (such as simple letter cancellation or the simple sorting or transferring of common objects) that are so simple that errors were highly unlikely, it may still be hypothesized that on such tasks interpersonal competition may be more effective than cooperation. Such tasks, however, have little relevance to classroom instruction.

Also contrary to expectations, Ss in the individualistic condition achieved higher than did those in the competitive condition on the drill-review task. One explanation of this finding is that the procedures used may have biased the results against competition. On the drill-review task the competitive group stopped twice during the 60 minute period to score the work completed and to change triads so that each student would be competing against peers of relatively equal ability. The individualized students worked uninterrupted for the 60 minute period. Thus, the difference between the two conditions on the drill-review task may be due to the greater amount of time on task in the individualistic conditions. On the programmed-learning and problem-solving tasks, students in the competitive condition were stopped only to announce the leading students' progress. It may still be hypothesized, therefore, that when time-on-task is equal, interpersonal competition results in higher achievement than does individualization on both simple and problem-solving tasks.

An interesting result is the discrepancy between the performance of students in the competitive condition on the specific-knowledge-acquisition task and the retention test. While the reason for this is not clear, it may be that the emphasis on speed created by the competition may interfere with focusing enough attention on each item to implant it in one's memory.

The past research has consistently found that the cooperative goal structure promotes more positive attitudes toward the learning task and session than either competition or individualization (see 5). In this study almost all of the students in the cooperative condition preferred the cooperative goal structure and believed it would promote the most learning in all three of the instructional sessions. Only a minority in the competitive and individualistic conditions preferred their goal structure and believed it would promote the most learning for them in the three instructional sessions. Competition, furthermore, was generally felt to be a frustrating, upsetting, and unenjoyable experience compared to cooperation and individualization. Students in the individualistic condition felt more lonely and less included than did the students in the cooperative condition. The implications of these results are that teachers may expect comparatively high achievement and positive attitudes toward the instructional task and session when a cooperative goal structure is used, may expect competition to be viewed negatively by students in comparison with cooperation and individualization (although it may facilitate achievement on problem-solving and programmed-learning tasks), and students who work individually may be expected to feel relatively lonely and unincluded.

Since programmed-learning materials were developed for individualizing instruction, the authors assumed that the individualistic goal structure would promote relatively high achievement on such a task. The results of this study, however, indicate that programmed-learning materials may be used more effectively with cooperative and competitive goal structures than with an individualistic one.

It is of some practical importance to be able to recommend to teachers the types of tasks that should be structured cooperatively, competitively, and individualistically in order to promote achievement and positive attitudes toward learning. Such recommendations should be based upon research using tasks commonly assigned in schools, and the research should be conducted in actual classroom settings. Many of the previous research studies that have found interpersonal competition to promote higher achievement than cooperation have used such tasks as maze learning or simple letter cancellation that are extremely simple and have little instructional value. The results of the present study imply that teachers who wish to promote high levels of student achievement might wish to structure drill-review tasks either cooperatively or individualistically, problem-solving tasks cooperatively, programmed-learning tasks cooperatively or competitively, and retention tests cooperatively. When they wish to pro-

mote positive attitudes toward instructional tasks and sessions, they might wish to structure the lessons cooperatively and avoid competition. In view of the results of this study, as well as the other research on goal structures, teacher training programs may wish to increase their emphasis on the skills involved in structuring learning cooperatively.

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FACTORS ASSOCIATED WITH MORE POSITIVE
BODY SELF-CONCEPTS IN
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SUMMARY

A national stratified sample of 264 three- to five-year old children and the parents or guardians of each child were individually interviewed to determine the body self-concepts of the children and factors associated with more positive body self-concepts. Of the factors examined—sex of child, nudity classification of family, race of child, area of the country, body build of child, years of education of head of household, birth order of child, age of child, age of parents or guardians, sex of interviewer, type of family structure, number of people in household, and number of siblings—only the first two were generally significant, with males having more positive body self-concepts than females ($p < .001$) and social nudists more positive body self-concepts than nonnudists ($p < .001$).

A. INTRODUCTION

Research over the past two and a half decades has consistently supported the premise of this study that body self-concept is an important part of overall self-concept because a person must function within the physical reality of his/her body (12, 13, 24, 26, 30). Negative or lower body self-concept scores have been associated with undue anxiety regarding pain (26); an increased number of somatic symptoms (9), a lessened ability to enter into intimate expressive relationships (5, 6), and a decrease in motor abilities (22).

In exploring when and how the relationship between body self-concept and social adjustment develops, Lieberau and Pienaar cited no difference in body self-concept of high adjusted and low adjusted six-year-olds but significant differences by the age of 10 with the higher adjusted also having

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higher body self-concept scores (19). In contrast, the research of Lerner indicates that the relative relations between a child's sex and body type and the interpersonal distance used toward him remain stable from kindergarten through sixth grade (15). In order to facilitate the development of healthy body self-concepts, it appears most promising to focus on preschool children.

Several studies indicate that three- to five-year-old children can validly identify body self-concept. Some indicate that children in this age range are more aware of body attributes of their own sex than the opposite sex (23, 28), while another concludes five-year-old children seem equally aware of body attributes of both sexes (7).

The literature was examined for factors which might influence body self-concept in preschool children. Numerous studies using older Ss indicated significant differences between male and female responses on body self-concept tests (3, 10, 11, 17, 18). However, the relationships between body self-concepts and sex in preschool children has not been well defined. Research with first grade Israeli children found great sex differences in body awareness (29), while a U.S. study found that body concepts and stereotypes did not significantly influence sex role development (14).

A summary of the great volume of race preference research done on children in the 1940s and 1950s with some continuing into the 1960s shows significant race differences in body self-concepts with an overwhelming preference for light skin color and lower body self-concepts in nonwhite children (25). Goodman found that racial awareness and racial differences in body self-concept were demonstrated in very young children (8). Even with the rise of minority consciousness and identities in the 1960s, Asher and Allen reported findings supporting stronger white color preference and lower nonwhite body self-concepts than were true in earlier studies (1). However, a 1976 study indicated that preschool children were aware of racial and ethnic differences but their body characteristic preferences were influenced by the social context, perhaps indicating a decline in the importance of race as a factor in body self-concept (20).

Research has revealed body type to be another factor influencing body self-concept. Five-year-old children were shown to have a consistent dislike of chubbiness (16), while six- to ten-year-olds were found not only to dislike the endomorph type but to prefer mesomorph body build (2, 27).

Nudity classification of the family also appeared to be a factor related to body self-concept, but no previous studies including body self-concepts of social nudists were found. Other factors not specifically treated in previous

literature on body self-concept but which still appeared worthy of examination in this study included area of the country in which the child lived, years of education of head of household, birth order of child, age of child, age of parents or guardians, sex of interviewer, type of family structure, number of people in household, and number of siblings.

B. METHOD

1. *Sample*

This study is based on research results drawn from a national sample of 264 three- to five-year-old children and the parents or guardians of each child. The sample was stratified to include four main variables: (a) Sex of the child (132 male and 132 female); (b) Nudity classification of the family (100 social nudists, 156 nonnudists, and eight "at home only" nudists); (c) Race of the child (143 Caucasian, 35 Black, 24 Chicano, 20 Indian, and 42 Oriental); (d) Area of the country in which the child lived (100 West, 80 Midwest, and 84 East).

Seventy-five of the 100 social nudist children were members of families belonging to The American Sunbathing Association, 25 each from Eastern, Midwestern, and Western clubs. Most of these families were delegates of their clubs to a national American Sunbathing Association convention. The other 25 social nudist children were members of California families who had visited a Southern California nudist beach more than 10 times. The length of time nudist parents reported being social nudists ranged from one year to 32 years with a mean of 8.6 years.

In order to try to equate them with the educational and socioeconomic background of the sample nudist families, nonnudist children were chosen from six university community preschools, two in California ($N = 50$), two in Iowa, ($N = 55$), and two in Delaware ($N = 59$). During parent interviews, three of the Iowa families and five of the Delaware families were found to practice nudity regularly at home and, therefore, were put in a separate, "at-home only" nudist, category.

Within each of the nudist, "at-home only" nudists, and nonnudist groups, and within each of the geographic area groups, half the sample was male and half female. Within each race, the number of males and females was within one of being equal. While a special effort was made to have approximately equal numbers of each of the five selected races in the nudist and in the nonnudist categories, the proportion of nudist children was actually nearer to one third with 59 Caucasian, 13 Black, six Chicano, six

Indian, and 16 Oriental children being nudist and the remainder of the sample of each of these races being nonnudist. All the "at-home only" nudists were Caucasian.

2. Procedure

Each child was given an individually administered body self-concept test. The test consisted of the interviewer pointing to a body part on nude drawings of a child of the same sex and race as the child being interviewed and asking, "Do you like your ___?" This was repeated for 16 body parts. With the use of the drawings, each child was also asked, "What part of your body do you like best? Why?" and "What part of your body do you like least? Why?" A structured, individual interview was conducted with each parent or guardian to determine concepts of the child's weight, height, and body build; reasons for these concepts; and selected demographic data.

There were no differences among the sample categories of each stratification or in total body self-concept scores according to years of education of head of household, child's birth order, age of child, age of parents or guardians, body weight, body height, body build, or sex of interviewer. Therefore these variables were considered to be controlled in the study.

There were differences ($p < .05$) among the sample categories of the nudity stratification and in total body self-concept scores according to family type, number of people in household, and number of siblings. Higher body self-concept scores were achieved by children in nuclear families, children in families with three to five members, and children who had zero to two siblings. Since a higher proportion of social nudist families than nonnudist families were in each of these categories, these three variables were controlled in the analysis by treating them as covariants.

C. RESULTS AND DISCUSSION

Similar to findings of previous studies, three- to five-year-old children in this study were already found to have clearly developed body self-concepts as evidenced by their ability to complete the self-concept test reliably. By retesting 38 of the children after two weeks, a test/retest reliability coefficient of .91 was obtained. Research by Dillon found that while three-year-olds may have emotional attitudes toward their bodies, five-year-olds had more awareness of body self-concept (4). Lerner and Gilbert discovered five-year-old females superior to five-year-old males at accurately identifying body builds (16). In contrast to these studies, the current study found no difference in reliability according to age or sex of the Ss.

Parents and guardians were found to have accurate perceptions of their children's body weight, height, and body build. Their ratings of these items correlated with the interviewer's ratings to give a Kendall correlation coefficient of .9198 for body weight, .9129 for body height, and .8364 for body build; all three were significant ($p < .001$).

An analysis of variance was done to determine the relationship between body self-concept test scores and (a) sex of the child, (b) nudity classification of the family, (c) race of the child, and (d) area of the country in which the child lived. While certain subscores, especially attitude toward genitals, showed significance, there was no relationship between total body self-concept test score and either race of the child or area of the country in which the child lived. Both sex of the child and nudity classification of the family were significant ($p < .001$) with males and nudists scoring higher than females and nonnudists. "At home only" nudists scored lower ($p < .001$) than social nudists and higher ($p < .01$) than nonnudists; but the sample size of "at home nudists" (8) was smaller than preferred.

In a further breakdown of the sex and nudity classification factors, nudism was found to be a more important variable than sex. Social nudist males scored higher than nonnudist males and higher than nonnudist females. Social nudist females scored higher than nonnudist females, and also scored higher than nonnudist males. All of these differences were significant ($p < .001$). When the nudity classification was not a variable, differences were only significant at the .01 level with nudist males scoring higher than nudist females and nonnudist males scoring higher than nonnudist females.

Answers to the questions "What part of your body do you like best?" and "What part do you like least?" were categorized according to a component analysis similar to that done by Mahoney and Finch (21) and analyzed by chi square. No relationship was found between the part of the body liked best and race or area of the country. However, sex of the child was significant ($p < .001$) with females more often liking best their hair, eyes, nose, or mouth; while males more often liked best their arms or their genitals. Nudity classification of the family was significant ($p < .001$) with nonnudists more often liking best their hair, eyes, nose, or mouth, while nudists named their genitals as best liked most often. No difference was found as to what body part was liked least according to sex, race, or area of the country. However, the relationship between body part liked least and nudity classification was significant ($p < .001$) with nudists most often answering they had no body part they least liked while nonnudists most

often named genitals as least liked. More nudists said they disliked their skin color more than any other body part, not because of their race but because of too little suntan or too much sunburn.

Three different judges independently categorized comments or reasons given for liking or disliking body parts into five categories: (a) Aesthetic (characteristics related to perceived looks); (b) Female sex role concepts (characteristics only women usually have); (c) Male sex role concepts (characteristics only men usually have); (d) Functional (descriptions related to use of the body part other than sex role related use); (e) Situational (characteristics which are temporary such as dirt or injury). There was 100 percent agreement between the three judges' categorizations of comments.

An analysis of variance was done among the number of comments in each category in relation to sex, race, area of the country, and nudity classification. Females made more aesthetic comments than males ($p < .001$), while nonnudists made more aesthetic comments than nudists ($p < .05$). Females made all the comments in the female sex role category ($p < .001$), while males made all the comments in the male sex role category ($p < .001$). No differences were found according to race on number of female sex role comments. However, Indians and Chicanos made more male sex role comments than did Blacks, Caucasians, or Orientals ($p < .01$). Males made more functional comments than females ($p < .001$), while nudists made more functional comments than nonnudists ($p < .046$). Nudists made more situational comments than nonnudists ($p < .019$).

Since there was no relationship in this research between total body self-concept score and either race of the child or area of the country in which the child lived, many subculture differences in our country may be less important to positive body self-concept than previously thought. Similarly, in contrast to previous studies, this study did not find a relationship between body weight, body height, or body build and body self-concept. These variables may be becoming less important to positive body self-concept because ideal body types are becoming less defined.

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TRANSGRESSION-COMPLIANCE: GUILT, NEGATIVE AFFECT, OR IMPRESSION MANAGEMENT?*

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SUMMARY

Two experiments were carried out with female undergraduates to test the hypothesis that increased willingness of *Ss* to engage in prosocial behavior following transgression is an impression management tactic and not a function of guilt or negative affect. In the first study 40 *Ss* were either illegitimately preinformed about how to perform well on the task and then induced to lie about having the information or they were not preinformed. Subsequent to task performance *Ss* were asked for a favor either by the original *E* or by a second one. Contrary to expectations of all the theories, the lie manipulation had no effect on prosocial behavior; however, consistent with impression management predictions compliance was greater to the request of the original *E*. In the second study ($n = 53$) a stronger lie manipulation was carried out, and *Ss* either did or did not receive suspicious feedback regarding task performance. *Ss* who did not transgress but received suspicious feedback displayed the greatest compliance. Secondary data also tended to support an impression management interpretation of this result and cast doubt on the guilt and negative affect hypotheses.

A. INTRODUCTION

It has been reliably demonstrated that American *Ss* who have been induced to transgress are more compliant to a request for a favor than are control *Ss*. Subjective states hypothesized to mediate the transgression-compliance relationship include guilt, negative affect, and impression management concerns. According to the guilt hypothesis, a person who knowingly commits a wrongful act suffers from a negative internal state (guilt)

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and attempts to expiate the guilt either through self-punishment or beneficent deeds (2). A somewhat analogous explanation, offered by Cialdini, Darby, and Vincent (1), maintains that transgression produces negative affect and that ensuing prosocial behavior replaces the aversive internal state with positive affect.

Tedeschi and Lindskold (4) have criticized the research designed to test the above hypotheses because it has failed to obtain measures of the inferred processes. They offered an impression management interpretation of the transgression-compliance relationship. They argued that *Ss* would not deliberately transgress in a laboratory situation when under the surveillance of an *E*. However, when *Ss* are subtly induced or tricked into an accident that might appear to the *E* as a deliberate transgression, they are concerned about attributions of responsibility for wrongdoing that the *E* might make. Hence, when they are provided with an opportunity to display a benevolent action, *Ss* avail themselves of the opportunity. In summary, impression management theory explains the prosocial behavior following transgression as a tactic directed toward restoring a positive identity which is jeopardized by the experimental manipulation. The two experiments reported here were designed to test the guilt, negative affect, and impression management interpretation of the transgression-compliance relationship and to supplement previous research by obtaining measures of the various inferred mediating variables.

B. EXPERIMENT I

In a partial replication of the first study reported by Freedman *et al.* (2) *Ss* were provided with illegitimate information about a task and then were induced to conceal this from the *E* or else they were not provided with illegitimate information. In one set of conditions the *E* was involved in all aspects of the procedures (*E1* conditions), whereas in a second set of conditions *E1* carried out the procedures through task performance, but *E2* asked for compliance (*E2* conditions). According to all of the theories under test, *Ss* in the Lie conditions should be more compliant than *Ss* in the No Lie conditions. According to guilt and negative affect theories, the impetus for compliance is attributable to the need to relieve an aversive internal state (guilt or negative affect). Once transgression occurs it should not matter who asks for compliance since prosocial behavior in any case should accomplish the individual's purpose. However, impression management theory views compliance following transgression as motivated by concern for how others perceive the person, and if the transgression occurs in front

of one person (*E1*) and compliance is asked by a second person who knows nothing about the transgression and *E1* is not apt to find out about the compliance), the likelihood of compliance should decrease. Hence, impression management theory would predict an interaction of the two factors with more compliance expected from *Ss* in the *E1* Lie condition than in any of the others. The other two theories should expect only a main effect produced by the Lie manipulation.

1. Method

a. Subjects Forty female undergraduates fulfilled an introductory course requirement by participation and were randomly assigned to conditions ($n = 10$).

b. Procedure The procedures followed those reported by Freedman *et al.* A confederate revealed or did not reveal general information about a Remote Associate Test to an *S* in the waiting room. *E1* gave the *S* an opportunity to confess having knowledge about the task prior to performance on it (none confessed). Following performance on the rather difficult task the *Ss* were asked by *E1* to fill out a Mood Adjective Checklist (MACL). It was at this point in the *E2* conditions that *E2* replaced *E1*, explaining that *E2* was helping out. Finally, *Ss* were asked (either by *E1* or *E2*) to volunteer for an experiment in the Educational Psychology Department, which would not count toward their introductory psychology requirement. Volunteers were signed up for a specific appointment and subsequent records were kept of whether appointments were kept.

2. Results

The results failed to replicate the findings of Freedman *et al.* of a Lie-No Lie main effect. Only a significant effect of *E1-E2* was found, $X^2 = 8.44$, p

.01. More *Ss* volunteered for *E1* ($n = 17$) than for *E2* ($n = 7$). The same pattern of results was obtained with regard to behavioral compliance, $X^2 = 4.37$, $p < .05$. More *Ss* in the *E1* conditions showed up for their appointments ($n = 11$) than in the *E2* conditions ($n = 3$). Contrary to the internal state theories of the transgression-compliance relationship, no effects of the lie manipulation were found on either reported guilt or on an overall index of negative affect derived by adding the items from the MACL ($ps > .10$).

3. Discussion

Although great care was taken to follow exactly the procedures reported by Freedman *et al.* the typical transgression-compliance relationship was

not found, nor were the hypothesized internal states related to the Lie manipulation in the manner expected. The main effect associated with who made the request for compliance partially supports impression management theory, though the motivation behind compliance cannot have been concern generated by transgression. A *post hoc* explanation of the present results might focus on the difficulty of the task, the lack of usefulness of the illegitimate information provided by the *C*, the fact that *Ss* were not induced to lie but merely not to volunteer the truth. A second experiment was carried out to strengthen the Lie manipulation and to introduce another factor that according to impression management theory should affect compliance.

C. EXPERIMENT II

In a 2×2 factorial design *Ss* were or were not induced to lie about receiving information useful to solving a task and then either did or did not receive suspicious feedback from the *E* about their performance. While none of the internal state theories would expect an effect of suspicious feedback, impression management theory hypothesizes that the reactions of *Ss* to suspicion should depend upon whether or not they had transgressed. Those who had not should be more motivated to display a positive identity through prosocial behavior, whereas those who had transgressed might refrain from too much compliance for fear that overeagerness might be interpreted as guilt. Thus, impression management theory predicts a difference between the Lie/Suspicious Feedback and No Lie/Suspicious Feedback conditions with the latter offering more compliance than the former.

1. Method

a. Subjects. Fifty-three female undergraduates fulfilled an introductory psychology course requirement by participation and were randomly assigned to conditions.

b. Procedure. The procedures were identical to those used in Experiment I with the following changes. *Ss* in the Lie conditions were told by the *C* that the task was in a multiple choice format and that most of the answers were "B's." Subsequently, the *E* asked the *Ss* whether they had any information that would help them on the task and waited for an answer. No *Ss* confessed having illegitimate information. After performance on the task *Ss* in the No Suspicious Feedback conditions were told that they had performed very well; in the Suspicious Feedback conditions the *E* expressed great surprise at the *S's* excellent score and exclaimed how

extraordinarily rare such a score was, almost unbelievable in fact. Ss were then asked to complete a MACL. Finally, the *E* explained that a graduate student in the Sociology Department needed to complete a survey and asked the *S* whether she would be willing to help by filling out some questionnaires. If the *S* volunteered, she was asked how many questionnaires she was willing to take.

2. Results and Discussion

The manipulations were successful. Ss in the Lie conditions made more "B" choices, rated themselves as less honest, and as more guilty than Ss in the No Lie conditions, who had not been preinformed about how to do well on the task (all p s $< .05$). Ss who had received suspicious feedback reported being more cautious than Ss who were merely told they had performed very well.

An interaction effect was obtained on the number of questionnaires accepted by Ss, $F(1,46) = 4.25$, $p < .05$. Ss in the No Lie/Suspicious Feedback condition were most compliant ($M = 6.80$), while those in the No Lie/No Suspicious Feedback condition were least compliant ($M = 3.55$). A specific contrast between the two suspicious feedback conditions tested the impression management hypothesis that Ss who had lied might be inhibited from "too much compliance" for fear it might be interpreted as a sign of guilt and that Ss in the No Lie condition would be more strongly motivated to display a positive identity through prosocial behavior when under suspicion. The contrast supported the hypothesis, $F(1,46) = 4.40$, $p < .05$. Mean compliance in the Lie/Suspicious Feedback condition was $M = 4.31$.

Although guilt differences were manifested as a function of the lie manipulation, an overall correlation between guilt and compliance of $r = .08$ was not significant, nor was the correlation between the measure of negative affect and compliance, $r = -.19$. Within cell correlations indicated a negative relationship between negative affect and compliance in the Lie/No Suspicious Feedback condition, $r = -.62$, $p < .05$; that is, the more negative the affective state of Ss the fewer the questionnaires they volunteered to complete. A positive correlation between negative affect and compliance was found in the No Lie/Suspicious Feedback condition ($r = .70$, $p < .05$); that is, the worse Ss felt about being under suspicion, the more they offered to help.

The failure to replicate the effects reported by Freedman *et al.* as a function of a lie manipulation is consistent with the suggestion by Noel (3) that most of the findings regarding the transgression-compliance relation-

ship operationalize transgression in terms of some material damage. He failed to replicate the usual relationship when he had Ss engage in non-material transgression, although they did justify their behavior by minimizing the amount of harm they did (as compared to Ss who did not transgress). Since telling a lie is a nonmaterial transgression, it may not affect prosocial behavior unless there is some chance the lie will be uncovered.

D. CONCLUSION

The two experiments reported here tend to support an impression management interpretation of the transgression-compliance relationship at least with respect to nonmaterial transgression. Further, measures of subjective states purported to mediate this relationship did not support the guilt or negative affect explanations. The results taken as a whole suggest a reconceptualization of American Ss' behavior following experimentally induced transgression which takes into account the impression management problem experienced by Ss and their interest in projecting a favorable identity to the E.

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THE EFFECTS OF DISCREPANT OR CONGRUENT
BEHAVIOR AND REWARD UPON ATTITUDE
AND TASK ATTRACTIVENESS*

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SUMMARY

Two hundred German secondary school students were promised different monetary rewards for performing either attitude-discrepant or attitude-congruent behavior. After the performance they made ratings of their attitude toward the attitude-object and evaluated the attractiveness of the behavior. After attitude-congruent behavior, attitude change towards the performed behavior was stronger with decreasing amount of reward. This result supports self-perception theory and contradicts incentive theory. On the other hand, the task was evaluated as more attractive the more the amount of reward increased. After attitude-discrepant behavior, there was a dissonance effect if the Ss were insufficiently rewarded, and an incentive effect if the reward was sufficient or oversufficient. This result cannot be explained by any of the theories in question, but it is in accordance with recent theoretical propositions by Gerard, Conolley, and Wilhelmy.

A. INTRODUCTION

Most theories in social psychology do not permit unambiguous derivations [*cf.* Greenwald (16)]. Even if one accepts the argument that experimental results at the present time cannot be construed as unequivocal evidence for or against a social-psychological theory, it is still interesting to find instances where relatively straightforward, but opposing, predictions are made by different theories. The present study is an attempt to test some of the predictions of the theory of cognitive dissonance [Festinger (10)] and

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the self-perception theory [Bem (2, 4)] against those of incentive theory [e.g., Janis and Gilmore (17)] in a situation where Ss are led to perform counterattitudinal behavior. Furthermore, opposing predictions from the self-perception and incentive theories were tested in a situation in which attitude-congruent behavior took place.

1. *Predictions for Attitude-Discrepant Behavior*

Cognitive dissonance theory and incentive theory make different predictions about the relation between amount of reward and strength of attitude change after attitude-discrepant behavior. Dissonance theory predicts that attitude change, in the direction of the position implied by the attitude-discrepant behavior, decreases with increasing reward for the attitude-discrepant behavior. Attitude-discrepant behavior leads to less dissonance when the reward for the performance of the behavior is high. The reason that such attitude-discrepant behavior leads to less psychological discomfort (or dissonance) when the rewards for performance are high is that high rewards can be used as justification for counterattitudinal behavior. One way to reduce the cognitive dissonance created by behavior inconsistent with one's beliefs in spite of insufficient justification, is to convince oneself that one's behavior was not really counterattitudinal. This hypothesis gained empirical support in several experiments [e.g., Festinger and Carlsmith (11); Cohen (6); Carlsmith, Collins, and Helmreich (5); Linder, Cooper, and Jones (19); Cooper and Worchel (8); Frey and Irle (13)].

An opposing prediction about the relation between amount of reward and attitude change can be deduced from incentive theory: with increasing reward for the attitude-discrepant behavior, there will be more attitude change in the direction of the position implied by the behavior. In several experiments evidence for this prediction of the incentive theory was found [Rosenberg (22); Janis and Gilmore (17); Elms and Janis (9)].

Present research has shown that hypotheses from the dissonance theory tend to apply when there is a high degree of freedom of decision, when negative consequences are anticipated, and when there is a possibility of being publicly identified with the attitude-discrepant behavior. Hypotheses derived from incentive theory seem to be more applicable when the freedom of decision is reduced, when no negative consequences are anticipated, and when anonymity of the attitude-discrepant behavior is guaranteed [cf. Nel, Helmreich, and Aronson (20); Cooper and Worchel (8); Frey and Irle (13); Collins and Hoyt (7)]. Dissonance theorists expect a negative

relationship between reward and attitude change only when high dissonance is aroused by counterattitudinal behavior; when there is only low dissonance, incentive effects should take precedence.

Bem's self-perception theory (2, 3) makes the same predictions as dissonance theory. According to self-perception theory, attitude change, in the direction of the position implied by the behavior, decreases with increasing reward. Bem (1) assumes that individuals infer their attitudes from their overt behavior, and that this inference is stronger the fewer external causes a person perceives for his or her behavior. The higher the reward for the performed behavior—according to self-perception theory—the more likely it is that a person will attribute his or her behavior to external causes. A low reward for a voluntarily performed behavior leads a person to conclude that there must have been an internal cause for the behavior: namely, his or her attitude.

2. *Predictions for Attitude-Congruent Behavior*

Until now, researchers have primarily focused on the relationship between amount of reward and strength of attitude change for attitude-discrepant behavior. Studies of the consequences of different levels of reward for behavior congruent with one's attitude are still rare [Kiesler (18); Nuttin (21)]. Dissonance theory makes no predictions for attitude-congruent behavior because such behavior should not produce dissonance. Incentive theory predicts, for attitude-congruent behavior, as well as for attitude-discrepant behavior, increasing attitude change towards the performed behavior with increasing reward. The opposite prediction may be derived from self-perception theory: attitude change towards the performed behavior should decrease with increasing reward. The more one is rewarded for a given behavior, the more this behavior is seen as externally caused, and the less attitude change towards this behavior will occur.

For *attitude-discrepant* behavior the alternative hypotheses are as follows:

1a. With increasing reward, attitude change in the direction of the position implied by the behavior decreases (dissonance-theory and self-perception theory).

1b. With increasing reward, attitude change in the direction of the position implied by the behavior increases (incentive theory).

For *attitude-congruent* behavior the alternative hypotheses are as follows:

2a With increasing reward, attitude change in the direction of the position implied by the behavior decreases (self-perception theory)

2b With increasing reward, attitude change in the direction of the position implied by the behavior increases (incentive theory)

In addition to attitude change, the attractiveness of the task was measured as a dependent variable. According to self-perception theory, it is to be expected that the attractiveness of the task decreases with increasing reward for both attitude-congruent and attitude discrepant behaviors. Dissonance theory makes the same prediction, but only for attitude-discrepant behavior. On the other hand, incentive theory would predict greater attractiveness with increasing reward for both attitude-discrepant and attitude-congruent behaviors.

Gerard (14) argued that the relationship between reward and attitude change following attitude-discrepant behavior should not be linear. The more a reward is seen as insufficient (i.e., below one's expectation), the more one will convince oneself that one's behavior was in line with one's attitude. On the other hand, an increasing incentive effect is expected the more the reward is seen as excessive (i.e., above one's expectation of a "fair" reward). In order to explore the possibility of such a curvilinear relationship, five levels of reward were used in the present experiment, as opposed to only two in most previous studies. By using only two levels of reward, one precludes the discovery of a curvilinear relationship.

B. METHOD

1. *Design and Subjects*

The Ss were 210 male and female secondary school students from Mannheim (West Germany) aged 15 to 18. They were recruited to answer questionnaires for one hour and afterwards were asked to participate in an additional experiment. Some of the Ss were asked to write an essay in favor of administrative measures to restrict student admission to West-German universities² (attitude-discrepant behavior), while the others were asked to write against these administrative measures (attitude-congruent behavior).

A pilot study had shown that more than 90% of all students tested strongly rejected the restrictions on university admission. Such near consensus proved this issue to be a suitable attitude-object for an "after-only"

² In Germany known as "Numerus Clausus."

design: DM 0 (no reward), 5, 5, 7, or 12 were promised for writing the essay.¹ This 2×5 factorial design was implemented without repeated measurement.

2. Procedure

The Ss were recruited, for DM 5, to participate in a one hour questionnaire study. After having finished this task, they were asked if they would participate in an experiment conducted by a colleague: participation was said to be absolutely voluntary. As in the experiment by Linder, Cooper, and Jones (19), the Ss were told to decide only after receiving more information about the task. All Ss agreed to this preliminary request. Until the Ss had decided whether or not to participate, forthcoming rewards were not mentioned. All instructions were given in writing. For all conditions the first paragraph read:

Our group has been commissioned by the University Committee on Administrative Restrictions of Admission to explore the arguments both in favor of and against the restrictions of the student concerned. The goal of our research is to collect and evaluate the arguments. As in our earlier studies, we shall proceed as follows: One group of participants will be asked to write an essay in favor of restrictions, another against the restrictions. In view of the short time available, this is the best procedure for obtaining a large number of convincing arguments for each side.

Then the Ss were told that the assignment to these two groups would be randomly determined.

Under the reward conditions, the Ss were informed that the study was financed by the university, and that every S who would later agree to participate would receive DM 3 (or DM 5, 7, 12) for writing the essay. Ss who were not to be rewarded were not told about rewards. Furthermore the Ss were informed that their arguments would be incorporated into a report on the problem of administrative restrictions on enrollment and that their essays would be printed in an appendix. They were told that they would have to write their names and addresses on the essay. This instruction was given in order to increase the Ss' commitment. Mentioning that their essays would be printed served to make the Ss aware of potentially negative consequences for themselves and others. Finally, before making the decision, the Ss were reminded again that they were completely free to decide whether or not they wanted to participate.

¹ At the time of the experiment, the reward levels were equivalent to \$1.15, \$1.92, \$2.69, and \$4.62, respectively.

The title of the essay, printed on the sheet given to the Ss, was either "Why I am in favor of administrative restrictions on admission" (attitude-discrepant condition), or "Why I am against administrative restrictions on admission" (attitude-congruent condition). Ten of the 210 Ss refused to write the essay. After about 20 minutes, the *E* asked the Ss to finish writing and answer, anonymously, a questionnaire containing the measures for the two dependent variables. Two eight-point Likert type items read, "What is Your attitude toward restriction of admission?" (levels: strongly in favor—strongly opposed), and "How attractive did You find the task?" (very attractive—not attractive at all).

Finally the Ss were intensively debriefed. None of the Ss admitted having had any suspicion concerning the true nature of the experimental task. Each S received DM 3 for his or her participation.

C. RESULTS

For ease of presentation, the results of the no-reward conditions are first compared with the reward conditions. Table 1 shows the means for the dependent variable "attitude towards admission restrictions."

As predicted from dissonance and self-attribution theories (see Hypothesis 1a), the attitude toward admission restrictions is more favorable when there is no reward for the essay favoring restrictions (attitude-discrepant condition). Under attitude-congruent behavior (essay against restrictions), reward produces more favorable attitudes towards restrictions on admission than does no reward. This accords with the self-perception theory prediction (see Hypothesis 2a). A 2×2 analysis of variance shows that the interaction was significant at the 4% level ($F_{1,189} = 4.10$). There were no main effects.

The results for the various levels of reward are presented in Figure 1. As can be seen for attitude-congruent behavior, there was a linear relationship between reward and attitude towards restrictions on admission: the more reward offered, the more favorable the attitude.

Clearly different results were obtained in the attitude-discrepant behavior conditions. The Ss who argued for the restrictions on admission without receiving a reward were more in favor of restrictions than those who received DM 3. This difference is significant at the .01 level and indicates a strong dissonance effect.

Comparisons of means using the Newman-Keuls procedure show that the DM 3 reward condition was significantly different from the DM 5 ($p < .08$), the DM 7 ($p < .05$), and the DM 12 ($p < .05$) conditions, lending some

TABLE 1
MEANS OF THE TWO DEPENDENT VARIABLES: ATTITUDE TOWARDS ADMISSION
RESTRICTIONS AND ATTRACTIVENESS OF THE TASK

Variable	Attitude score ^a		Attractiveness ^b	
	No reward	Reward	No reward	Reward
Attitude-discrepant	6.22	6.59	4.22	5.41
Attitude-congruent	6.57	6.19	4.82	5.37

^a The higher the mean the less favorable is the attitude towards restrictions (1 = strongly in favor restrictions, 8 = strongly opposed to restrictions).

^b Higher means indicate higher rated attractiveness of the task.

^c Reward conditions combined.

support to an incentive interpretation. The DM 5, 7, and 12 conditions were not significantly different from each other, with a small, nonsignificant decrease in favorability from the DM 7 to the DM 12 condition.

Besides indicating their personal attitudes towards restrictions on admission, the Ss were asked to rate the attractiveness of the experimental task on an eight-point-Likert-type scale. First, the results of the reward conditions are compared to those of the no-reward conditions. Table 1 also presents the means for these conditions. The analysis of variance shows a clear main effect of reward; under no-reward conditions the attractiveness

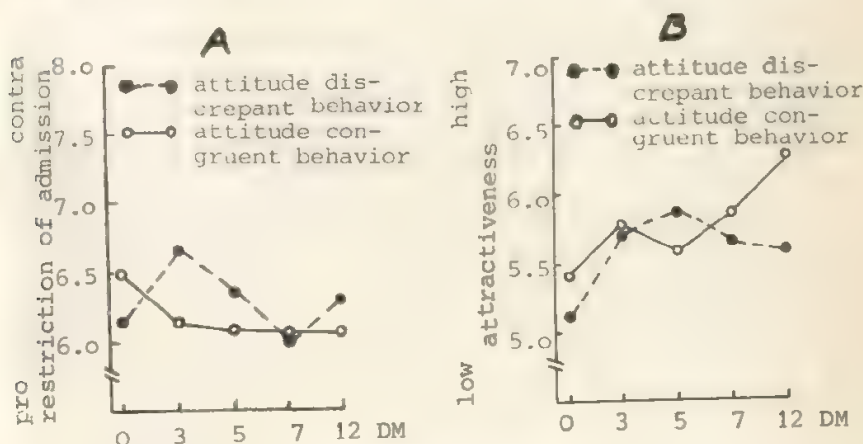


FIGURE 1
THE EFFECTS OF DISCREPANT OR CONGRUENT BEHAVIOR AND REWARD UPON ATTITUDE
AND TASK ATTRACTIVENESS

- A. Attitude towards admission restrictions.
B. Estimation of attractiveness of the task.

of the task was lower than under the reward conditions ($F_{1,189} = 11.50, p < .001$). Figure 1 indicates a linear relationship between amount of reward and attractiveness ratings in the attitude-congruent condition. In the attitude-discrepant condition there was a curvilinear relationship: the task was rated least attractive to Ss not receiving any reward; the attractiveness increased for DM 3 and DM 5 conditions and decreased again for DM 7 and DM 12 conditions. The quadratic trend reached significance at the .03 level.

An analysis of variance showed significant effects of reward both for quantity ($p < .01$) and quality of performance ($p < .04$). However, there was no significant correlation between the attitude toward restrictions on admission and the attractiveness rating for the task ($r = -.06$), nor between attitude towards restrictions on admission and task attractiveness, with both quantity (measured by number of words written in the essay) and quality of performance (as evaluated by two independent raters).

D. DISCUSSION

The results in the attitude-congruent conditions are easier to deal with than those in the attitude-discrepant conditions. For attitude-congruent behavior, hypotheses of incentive theory and self-perception theory were tested. The results clearly support the prediction of self-perception theory: Ss who had argued against restrictions on admission for a reward were less strongly opposed to the restrictions than nonrewarded Ss. Rewarded Ss apparently attributed their behavior, at least in part, to external factors—i. e., the reward. To receive a reward for something that one would normally do without a reward, seems to make one unsure whether one really believes in what one has been doing. This is evidently contrary to the incentive theory prediction (Hypothesis 2b); Hypothesis 2a, derived from self-perception theory, is confirmed.

For attitude-discrepant behavior, the results lend no clear support to any of the three theories in question. When the no-reward condition is compared to all reward conditions, the results support the dissonance and self-attribution theories. The results at different reward levels, however, complicate this simple picture considerably; while a comparison of the no-reward with the DM 3 condition indicates a strong dissonance effect, an incentive effect is found for the other reward conditions. Evidently, this is contrary to both Hypotheses 1a and 1b. There is a theory, however, that may be suitable for a *post hoc* explanation of these results. Gerard, Conolley, and Wilhelmy (15) developed a theory of "resultant justification" which

predicts dissonance effects for low rewards ("insufficient justification"), but incentive effects for high rewards ("sufficient" and "oversufficient justification"). They argue that dissonance theory applies only to conditions of insufficient justification, not to those of sufficient or oversufficient justification.

This still leaves us with the question of how to explain the dissonance effect between the no reward and the DM 3 condition. Why was no reward insufficient in the sense of Gerard *et al.* (15) but not a reward of DM 3?

The explanation may be found by looking at the experimental procedure. Normally the university pays Ss DM 5 for each hour, and Ss know this. Ss for the present experiment were also promised DM 5 for a one-hour experiment. The experiment described here started when this hour was already over. (This was done in order to produce no-reward and reward conditions without the risks of self-selection.) The *E* told the Ss that the time for which they had volunteered was now over, but that they had the opportunity to participate in the experiment of a colleague. They then learned that the task would take about 20 minutes. Measured by the standards known to the Ss, they could expect DM 2 to 2.50 as fair compensation. It can thus be assumed that the offer of a much higher reward was considered as oversufficient or "excessive" payment, whereas a lower reward was perceived as insufficient. If these assumptions are correct (unfortunately there are no data to confirm them directly), the hypothesis of Gerard *et al.* (15) seems to be tentatively supported: after attitude-discrepant behavior an incentive effect is stronger the more the reward for the behavior is perceived as excessive, and a dissonance effect is stronger the more the reward is perceived as insufficient.

Several previous studies in forced compliance research have shown that the results concerning the relation between amount of reward and attitude change are inconsistent. Several reasons for this inconsistency have been discussed [e.g., Frey (12)]. The present results show that both dissonance and incentive effects can be demonstrated with the use of a wider range of rewards.

The results for the second dependent variable, attractiveness of the task, do not closely parallel those for attitude change. The comparison of the no-reward with the reward conditions shows a significant main effect ($F_{1,189} = 11.50, p < .001$): rewarded Ss found the task more attractive than unrewarded Ss. In addition, there are some notable differences between reward levels for both attitude-congruent and attitude-discrepant behavior. For attitude-congruent behavior there is a direct, linear relationship be-

tween amount of reward and attractiveness, i.e., with increasing reward, attractiveness of the task increases. However, for counterattitudinal behavior, there is a curvilinear relationship. The task is rated most attractive if a moderate reward is obtained and least attractive if either a high or a minimal (or no) reward is received.

After an exceedingly high reward, the attractiveness of a counterattitudinal act decreases. This finding can be explained by assuming that cognitive dissonance is created within Ss who are excessively rewarded. This dissonance can be reduced by the Ss' evaluation of the whole task as difficult and uninteresting so that the reward can be seen as adequate compensation.

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ATTITUDES AND VALUES: A FURTHER TEST OF THE SEMANTIC MEMORY MODEL*

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SUMMARY

A hierarchical model for the storage of attitudes and values, for which evidence was presented by Gold and Russ, was studied with the use of a choice reaction time paradigm. Twenty three male and female university students responded with evaluative judgments (good-bad, etc.) by pressing one of two telegraph keys to a series of stimuli consisting of 10 of Rokeach's terminal values, 10 values designed by the authors to be the opposites of these terminal values, and 42 attitude items. Items preceded by values to which they were related, as determined through a previously administered paper and pencil measure, were responded to faster than items preceded by unrelated values. The value RT's did not vary as a function of their relatedness to the preceding attitude items. Positively held values were responded to faster than negatively held values. No RT effects were found for matching or mismatching in the evaluative sign of the attitude item-value or value-attitude item pairs. The results were interpreted as supporting a hierarchical storage model of attitudes and values.

A. INTRODUCTION

In a recent study by Gold and Russ (2) evidence was presented which supported a hierarchical model in line with that of Collins and Quillian (1), applied specifically to the semantic storage of attitudes and values.

It was posited that evaluations of attitude items are stored with their related superordinate values rather than with the attitude items themselves. Evaluating an attitude item would thus involve a search to the related superordinate values, whereas evaluating a value item would require no such additional search and could be accomplished more quickly. For example, a good-bad judgment about integration might necessitate a

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search to equality; this search time would be reduced if equality was the probing value. Such reaction time (RT) facilitation was found for attitudes preceded by related values, but only when the relationship was an enhancing one. When an attitude item was preceded by a value which it blocked, no facilitation was found. Possibly, attitude items that are related to values in a blocking manner are not stored subordinately to those values, but rather they are stored under values which they enhance. Thus segregation might block the attainment of equality but would be stored under inequality, to which it would bear an enhancing relationship. This possible interpretation is based upon a view of a person's cognitive system as composed of belief and disbelief subsystems (5). These subsystems vary in their centrality or importance to the person. The disbelief subsystems are organized along a continuum of similarity to a belief subsystem and are relatively less differentiated than the belief subsystem. Since that study employed only values which described "ideal end states of existence" (6)—i.e., even those values ranked as low in importance were positively evaluated—a test of the above interpretation was precluded.

Another related question raised by the results of the Gold and Russ study involved the possible effects of congruence between the evaluative sign of the attitude and that of the value. Specifically, was the facilitation of attitude RT's when probed by values which they enhanced due solely to their instrumental relationship, or was this facilitation due to some extent to an evaluative match (i. e., both attitude item and value are positively evaluated)? The addition of negative values in the present study provided for an attempt to answer this question by varying the evaluative sign of the values and attitude items, as well as their degree of instrumental relatedness. It was predicted that relatedness between attitude items and their probing values would effect RT's to a greater extent than a congruence in evaluative sign. In line with the results in the previous study it was predicted that relatedness would have no effect on the value RT's and that the value RT's would be significantly faster than the attitude RT's.

B. METHOD

1. *Subjects*

Twenty-three male and female students selected from the introductory psychology *S* pool were the *Ss* in the study.

2. *Pretest Materials*

Each *S* was given a questionnaire booklet which included 10 of Rokeach's 18 terminal values (6) and also each of 10 values designed by the authors to be the inverse of these. For example, "inequality" was chosen to be the inverse of "equality," and "a routine life" was chosen as the inverse of "an exciting life." These 20 values were both rank ordered from 20 (most) to 1 (least) important and rated on a value satisfaction scale from $+10$ = "provides maximum satisfaction" to -10 = "provides maximum dissatisfaction." Perceived instrumentality (7) was assessed via a 42×20 matrix on which each *S* rated the extent to which each of 42 attitude items adapted from Wilson's Attitude Survey (8) was instrumental to the attainment of each of the 20 values. Examples of these attitude items are as follows: integration, segregation, nuclear power, teachers' strikes, modern art, and women judges. The perceived instrumentality rating scale ranged from $+3$ (strongly enhance) through zero (totally unrelated) to -3 (strongly blocks). Each of the 42 attitude items and the 20 values were then rated on the following four bipolar adjective dimensions selected from the evaluative dimension of the Semantic Differential (4): good-bad, wise-foolish, beautiful-ugly, and rational-irrational. In every case the positive pole was scored as 1, and the negative pole as 2. A final section of the booklet dealt with rating 16 political figures on 11 bipolar dimensions and was unrelated to the purposes of the present study.

3. *Experimental Materials*

High contrast slides were made for each of the 42 attitude items, 20 values, and 16 political figures. Four copies of every value and two copies of every attitude item and political figure were used. These stimuli were placed into four slide trays. Two trays had the following sequential arrangement: three values, an attitude item, 20 values alternating with 20 attitude items, 16 political figures, and three values. The other two slide trays had the same arrangement except that the political figures were omitted. The initial and final three-value clusters were comprised of values which had not been ranked or rated and were for practice purposes only. The order of the values and the choice of attitude items for the first two trays were randomly determined. The order of the attitude items from the first and second trays was maintained in the third and fourth trays, respectively. The inverse value to that value which preceded an attitude item in one of the first two trays was substituted for it in one of the second

two trays. For instance, if the value "equality" preceded the attitude item "integration" in the first tray, then "inequality" would precede "integration" in the third tray. The first two trays were thus ordered as follows: 3V, AI, 20(V-AI), 16P, 3V, where V = value, AI = attitude item, and P = political figure.

4. Procedure

The questionnaire booklets were completed in one testing session. Ss were then individually called to the experiment two to three weeks after completion of the pretesting. Slides were presented via a Kodak Model 800 programmed carousel slide projector. Ss were instructed to respond to each of the stimuli according to which adjective of the bipolar pair he felt best described the item. The Ss forefinger of his dominant hand rested between two telegraph keys each randomly designated by one of the two bipolar adjectives. Upon presentation of the stimulus, the S was to respond as quickly and accurately as possible by pressing the appropriate key.

Presentation of the slide automatically initiated a Lafayette Instrument Company Model 54419 timer and the S's key press terminated the timing session. This initiated a three-second delay interval after which the next slide was automatically projected.

Ss were randomly assigned to one of four stimulus sequence presentations. Within each sequence, each one of the four trays was paired with one of four bipolar adjective pairs. Each tray was administered both forward and backward, paired with a different bipolar adjective pair for each direction. The adjectives in each pair were also switched from right to left positions alternately to insure against response bias. Thus, each S was presented with a series of eight trays, four in the forward position, and four in reverse. Adjective pairs were assigned so that each pair was associated with one and only one tray sequence. In this manner the Ss could receive all the stimulus items twice, once in the forward position and once in reverse, plus all bipolar adjective pairs.

C. RESULTS

Attitudes item RT's were divided into eight categories based upon (a) the perceived instrumentality between the attitude item and the value which probed it (related *vs.* unrelated), (b) the evaluative sign of the probing value, and (c) the evaluative sign of the attitude item. Relatedness between the attitude item and value was operationally defined as a perceived instrumentality of positive or negative two or three, while a perceived

instrumentality between plus and minus one inclusive was defined as unrelated. The evaluative sign of the attitude items and values was determined by their mean scores over each of the bipolar dimensions on the pretest. Positive and negative evaluative signs were defined by mean scores of 1.000 and -1.000, respectively. Cases where evaluations were mixed were excluded because it was believed that they would confound analyses of the effects of evaluative sign. Value RT's were categorized in the same manner on the basis of their probing attitude items.

Separate 2 (related-unrelated) by 2 (attitude item + or -) by 2 (value + or -) analyses of covariance were conducted with use of stimulus length as the covariate. Stimulus length was calculated by simply counting the number of typed spaces used in a given value or attitude item.

The analysis of the attitude item RT's showed only a significant related-unrelated main effect ($F = 6.29$; $df = 1, 125$; $p < .02$). Attitude items which were related to the probing values were responded to more quickly than those probed by unrelated values (Related $\bar{X} = 1.300$ sec, Unrelated $\bar{X} = 1.4020$ sec).

The analysis of the value RT's as a function of the probing attitude items yielded a significant effect only on the positive vs. negative value comparison ($F = 14.70$; $df = 1, 125$; $p < .001$), with the positive values being responded to more quickly than the negative values (Positive $\bar{X} = 1.1096$; negative $\bar{X} = 1.2910$).

Value RT's were compared with attitude item RT's in a 2×2 analysis of variance consisting of two levels of stimulus object (value-attitude) and two levels of evaluative sign (+ -) covarying for stimulus length. Since, in the research design, each value was employed as a stimulus object twice as often as each attitude item, the RT's from the first four presentations of each value were compared with all of the attitude RT's. This approach equated the value and attitude items for response frequency. A significant effect was found for evaluative sign ($F = 7.29$; $df = 1, 59$; $p < .01$), showing positive stimuli being responded to more quickly than negative stimuli over both values and attitude items (positive $\bar{X} = 1.2838$; negative $\bar{X} = 1.3810$). The interaction between stimulus object and evaluative sign was also significant ($F = 9.08$; $df = 1, 59$; $p < .01$). In order to explicate these results simple main effects were assessed using Tukey's q statistic (3). In this analysis it was found that the mean RT for positive and negative attitude items did not differ significantly ($q = .6512$; $df = 59$; NS) and that neither the positive nor negative attitude item RT's differed significantly from the negative value RT's. The mean RT for positive values, however,

was significantly faster than that for positive attitude items (positive values $\bar{X} = 1.1896$; positive attitude $\bar{X} = 1.3780$; $q = 5.8148$; $df = 59$; $p < .01$), and also significantly faster than that for negative values (negative values $= 1.4051$; $q = 6.6512$; $df = 59$; $p < .01$).

D. DISCUSSION

The results lend further support to the findings of the previous study, and extend that model by clarifying some of the questions raised in that research. The results of that study showing RT facilitation for enhancing value-attitude relations do not seem to be due to the positive evaluative sign of the pairs, since the facilitation occurred in this study where the signs were either positively or negatively matched, or mismatched: attitude items which were related to the values which probed them were responded to faster than those items which were probed by unrelated values regardless of the evaluative sign of the attitudes or that of the values. Thus storage seems to be on the purely functional basis of whether or not the attitude is related (blocks or enhances) or is unrelated to the value.

Also as in the previous study, there was no effect on value RT's as a function of whether the probing attitude items were related or unrelated. The finding that the positive values were responded to more quickly than the negative values appears, on the basis of the value rankings and ratings, to be due to the fact that the positive values are more central and thus more easily accessible.

The hierarchical model posits that attitude items are stored under their related values and that the evaluative components of the attitude item are stored with the values. In evaluating an attitude item, then, a search for an appropriate superordinate value would be necessary. Probing the attitude item with a related value should prime the evaluation, thereby shortening search time; probing with an unrelated value should have no effect on search time. The related-unrelated main effect strongly supports this model.

Since, in this model, evaluative components are stored with the values, no additional search time should be necessary in order to judge the values once they are accessed. Regardless of the relationship which the probing attitude has to the value, then, there would be no effect upon the value RT's. This conclusion is supported by the finding of only a positive *vs.* negative value effect and no relatedness effect. Further evidence is provided by the comparison between value and attitude item RT's while controlling for response frequency. The finding of a value RT advantage in

the Gold and Russ study was supported for the positive values only, again reflecting their centrality and ease of accessibility relative to the negative values.

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AN ANALYSIS OF RAPE PATTERNS IN WHITE AND BLACK RAPISTS*

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SUMMARY

A number of characteristics of rapists in the state of Georgia, their victims, and the acts of rape themselves were correlated and submitted to independent factor analyses for black and white rapists. The factor structures for the two races were similar in some ways but distinct in others. Factor 1 for black rapists loaded positively with age, negatively with education, and negatively with the use of psychological threat. Factor 1 for white rapists included a plus loading for age and a minus loading for education, the same as for the black rapists. However, positive loadings on closeness of relationship to the victim and premeditation also were found for whites on this factor. A second factor for black rapists included a positive loading on two items: closeness of association with the victim and premeditation. *Post hoc* analysis revealed that white rapists were more likely to use physical force with victims to whom they were more closely related, whereas black rapists showed an increased likelihood of physical force with victims who were less familiar.

A. INTRODUCTION

Attempts by researchers to understand the social dynamics of rape have ranged from the search for unitary differences between rapists and some reference group to more elaborate typologies that seek to explain the variability between acts of rape. Among the unitary variables that have been identified as characteristic of the rapist are assertiveness (5), sexual conflict (12, 15), alcoholism (14), and lower socioeconomic status (13).

Efforts to identify types of rape have produced widely variant results. Gebhard, Gagnon, Pomeroy, and Christenson (3) considered rapists as part

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of a more general category of sex offenders, concentrating their attention upon three independent aspects of the rape—heterosexual or homosexual nature of the act, consent *versus* force, and age of the victim. No clear typology relevant only to rapists emerged.

Two types of rapists were reported by Gibbons (4). The *aggressive* rapist was viewed as a product of the lower-class tendency to employ force in interpersonal relations; otherwise this type of rapist was thought to be unremarkable. The *violent* rapist was not a social class product but differed primarily in terms of family sex experiences such as repressive sexual attitudes or seductive mother-son interactions.

Amir (1) proposed three types of rapists. The *idiosyncratic* rapist commits the act either because of underlying psychopathology or because of unusual circumstances; social roles are of no significance. The *role-supportive* rapist usually emerges from the youth culture, and the act is performed to maintain group membership or for sheer sexual gratification. No psychopathology is assumed. The third type, the *role-expressive* rapist, engages in the act less for sexual satisfaction than for other social context reasons such as participation in group rape. An earlier typology (2), based upon the motivation instigating the rape, also included three types of rapists. *Sadists* were driven by the need to inflict pain upon the victim, *satyriasisists* by insatiable sexual desires, and *libertines* by the need to assert superiority and virility.

The present study represented a further attempt to identify different patterns of rape. It diverged somewhat from its predecessors by greater utilization of statistical techniques to guide its conclusions. The data from which patterns of rape were sought included characteristics of (a) the rapist (age, education, race), (b) the victim (relationship to rapist), and (c) the act (use of physical force, use of psychological threat, impulsiveness).

B. METHOD

1: Subjects

Data from the records of 94 males convicted of rape or attempted rape were analyzed. Fifty-four (57%) were blacks and 40 (43%) were whites. The proportion of black rapists was somewhat higher than the United States national average of 46% reported by Gibbons (4). Average ages at time of offense for the black and white rapists were a similar 28.22 (range = 15-63) years and 29.38 (range = 17-60) years, respectively. Mean educational levels also were similar for the black (7.65 years, range = 0-13 years)

and the white (8-23 years, range = 0-14 years) rapists. Most of the rapists came from lower-class backgrounds.

2. Measures

All information regarding the rapist, the nature of the act, and the female victim was obtained from the criminal's file maintained in the office of the Georgia Board of Pardons and Paroles.²

Three variables relating to the nature of the act required judgments based upon the description of the crime. Use of physical force during the rape, use of psychological threat, and impulsivity-premeditation of the act were rated by the second investigator, a senior at Emory College, on four-point probability scales. For the first two variables, these scales ranged from clearly not involved (score = 1) to clearly involved (score = 4). For the third variable, the ratings were made from clearly an impulsive act (score = 1) to clearly a planned act (score = 4).

Twenty of the cases were rated independently by a second rater, also a senior at Emory College. The three coefficients of interjudge agreement were reasonably high, suggesting an acceptable reliability for these ratings. They were physical force, $r = .78$; psychological threat, $r = .81$; impulsivity, $r = .79$.

Despite the satisfactory interjudge agreement on the three variables requiring judgment, the question remains whether the information upon which these judgments were based can be considered reasonably accurate (e.g., free of systematic stereotype, free from assumption and conjecture). Two things suggest an affirmative response. First, since the major source of information for the description of the crime is the arresting officer (s), possible stereotypes based upon race of the officer or the criminal could influence perceptions of the circumstances. However, the black/white racial pattern of arresting officer and criminal tends to be unsystematic, especially in Atlanta which is the major crime area in the state. Accordingly, it is exceedingly unlikely that if racial stereotypes do exert influence on perceptions, they could contribute systematically to the present results. The second basis for assuming a reasonable degree of accuracy for the description of criminal circumstances resides in the clear directive issued by the Board of Pardons and Paroles that when information is abstracted for its files from prior police records, fact and not conjecture be selected.

² The investigators would like to express their appreciation to Mrs. Mamie Reese, Chairman, Georgia Board of Pardons and Paroles, and to the Board staff for their generous cooperation in this study.

3. Procedure

The sample of 94 rapists represented all cases who had received parole within three years of data collection and whose folders contained the information necessary for purposes of this investigation. Pearson product-moment correlations among the rape variables were determined separately by race³ and submitted to independent image factor analyses (10). The varimax (11) criterion was used to achieve orthogonal simple structure. Factor loadings of at least .30 were required for inclusion of a component.

C. RESULTS AND DISCUSSION

Factor structures for the two races were similar but not the same. An age-education factor was found for both white and black rapists; loadings are indicated below in parentheses. However, the pattern suggested by factor 1 for the white rapist [age (.91), education (-.54), relationship (.46), premeditation (.33)] was the more complex. The factor loadings describe an older, less educated man who plans and executes the rape of someone he knows or even a family member. Alternatively, this pattern would describe a younger, better-educated white man who impulsively rapes a stranger.

Factor 1 for the black rapist include age (.88), education (-.57), and psychological threat (-.30). Their loadings associated the older, less educated rapist with less intimidation of his victim; the younger, more educated black rapist, alternatively, was more likely to use threat in the act of rape. The tendency to act impulsively with strangers but to preconceive the rape of more familiar victims also emerged for the black rapist. However, this relation emerged as a second factor, independent of age and education, for the black rapist [relationship (.54) and premeditation (.45)].

It seems clear that the correlational analysis of rape characteristics did not produce highly articulated patterns of rape. With the limited number of variables considered in the factor analysis, perhaps no more could be expected. Yet some of the things that were not found are of interest. For example, the use of physical force did not relate meaningfully to the remaining variables. This might suggest that its occurrence in rape is not a predictable event. Another point-of-view would be that physical force has a more complex relation with other aspects of rape which did not surface due to the correlational mode of analysis used in this study. Supporting this view is the fact that a *post hoc* analysis did suggest an interaction between

³ Prior investigations (6, 7, 8, 9) have suggested the utility of considering the dynamics and implications of violent crimes separately by race.

race, familiarity of the victim, and the probability of physical force during a rape. White rapists were increasingly likely to have used force with greater familiarity of the victim (stranger = 2.33, friend = 2.44, family = 2.80). Black rapists demonstrated the opposite pattern; the probability of force increased with decreasing familiarity of the victim (stranger = 2.93, friend = 2.55, family = 1.80). These mean figures, analyzed by a 2×3 factorial analysis of variance for unequal cell Ns (16), revealed a significant interaction effect [$F(2, 67) = 3.67$; $p < .05$]. What is not clear from these data is whether the use of force is more critically linked to the aggressiveness of the rapist or to the resistance of the victim.

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SOCIAL DESIRABILITY AND LEADER EFFECTIVENESS*

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SUMMARY

The effect of social desirability response bias on the Least Preferred Co-worker (LPC) scale used in tests of Fiedler's Contingency Model of leadership effectiveness was investigated in two studies. In the first study, 89 managers of a steel fabricating plant completed a questionnaire containing the Crowne and Marlowe (1) measure of social desirability and three scales used by Fiedler in tests of his model (including LPC). None of these measures correlated significantly with social desirability. In the second study, 16 first-line construction crew supervisors were randomly assigned to two conditions. In the first condition, as the supervisors arrived at the testing site, they were taken aside and told by the company's president to "be supportive and considerate" of subordinates. In the second condition, the supervisors were not taken aside nor told to "be considerate." A manipulation check using the Crowne-Marlowe social desirability scale indicated a significant difference between the two conditions (as expected), but no differences were obtained in any of the three Contingency Model measures administered to the respondents (including LPC).

A. INTRODUCTION

The effects of social desirability on self-report measures have been investigated in many areas of psychology (2), but only recently has this response bias (the tendency to describe oneself in socially desirable terms) been examined in organizational social psychology (9).

In perhaps a ground-breaking study, Thomas and Kilmann (9) obtained significant relationships between the Crowne-Marlowe (1) social desirability instrument and three commonly used measures of conflict resolution style. Reviewing the evidence on the pervasiveness of social desirability effects on self-report measures, Thomas and Kilmann conclude that they may be

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powerful and that "these general dynamics and distortions [social desirability] would be expected to operate in studies of organizational climate, leadership, risk-taking, etc.—anywhere, in short, where ratings are used to assess variables with evaluative overtones" (9, p. 749). This general conclusion seems to agree with that of other researchers; social desirability has been suggested as the major component of reliable scale variance in many measures (5).

Given the ability of social desirability to distort self-report measures, it seems reasonable to ask whether it affects the instruments commonly used in testing Fiedler's (4) Contingency Theory of Leadership Effectiveness. This is because (a) social desirability is expected to operate most strongly where measures have an evaluative overtone (9); (b) the evaluative dimension is the largest variance component in most semantic differential scales (6); and (c) two of Fiedler's measures are semantic differential scales which call for affective evaluations. Also, what Fiedler's leadership scale (LPC) actually measures is unclear (7). Fiedler himself has suggested, in an early and often overlooked research report (3), that this leadership measure may be concerned with measuring "primarily a test response set" (3, p. 43). Finally, only one study (4) has investigated the effects of social desirability on the Contingency Theory's leadership variable (none could be located on Fiedler's other measures). In that study, 163 male college undergraduates were employed—no actual employees of work organizations were used. Thus, although no significant relationship was found, that one study was clearly not sufficient to conclude that LPC is immune to the effects of this apparently powerful response bias (especially given Fiedler's suggestion that LPC may, in fact, be only a measure of response bias). Two studies were therefore conducted to address this issue.

B. STUDY ONE

The sample employed in the first study consisted of 89 managers of operative employees working in a medium-sized Midwest steel fabricating plant. All had supervisory responsibilities, the majority were over 30 years old, and most had worked for the company for at least three years. During a normal work day, a questionnaire was administered in groups of 10-15. It contained a cover letter giving a vague description of the purpose of the study, and assured complete anonymity (no names were asked for). The questionnaire included (a) the Crowne-Marlowe (1) social desirability scale, (b) Fiedler's (4) 16-item, eight-point semantic differential LPC scale (which measures the esteem in which the leader holds his/her Least Preferred

Co-worker), (c) Fiedler's (4) 10-item, 8-point bipolar adjective group atmosphere scale (which measures the degree to which the leader feels the work group is friendly), and (d) Fiedler's (4) 13-item, dichotomous-scored ("yes"/"no") position power scale (which measures the leader's formal position power over subordinates).¹ Correlating these measures yielded the results shown in Table 1 which indicates that all three of Fiedler's scales obtained trivial and nonsignificant correlations with social desirability. Thus, this suggests that under the conditions normally encountered in field studies, social desirability may not represent much of a problem for Fiedler's measures. However, to determine how resistant these scales are to such effects, a second experiment was undertaken.

TABLE 1
STUDY 1 RESULTS

Variable	KR-8 ^a	Correlations (<i>N</i> = 89)		
		1	2	3
1. Social desirability	.82			
2. LPC	.89	.19		
3. Position power	.91	-.07	.01	
4. Group atmosphere	.89	-.14	-.03	.42*

^a Kuder-Richardson Formula 8 reliability.

* $p < .01$.

C. STUDY TWO

1. Method

a. Subjects. The *Ss* of the second study consisted of 16 foremen employed in a medium-sized construction firm located in the Midwest. All reported directly to the president (and founder) of the firm, and had 8-12 subordinates under their direct supervision. All were over 35 years old and had been foremen at this company five years or more.

b. Procedure. The *Ss* were informed that the company had agreed to participate in a research project and that their participation was desired (all agreed to participate). They were then told that they would be paid by the company for their participation time and to report to a local high school at a specified hour. As the *Ss* arrived on site, half ($N = 8$, selected at random)

¹ A measure of task structure, the second most important situational element in Fiedler's Contingency Theory, was not included in this study because most of the time it has been measured by asking independent observers to rate the degree of structure involved in group members' work.

were taken aside and told in private by the company president to "do well," that he would "discuss their answers with them," and that they should "be supportive and considerate" of subordinates (i. e., high LPC); the other half ($N = 8$) were not told this and did not see the president.

All Ss completed the experiment in the same room, but strict control procedures were maintained and they were not permitted to speak with each other. At the conclusion of the experiment four Ss from each group were briefly interviewed and all Ss then debriefed and released from the site.

c. Measures. All Ss completed the same questionnaire used in the first study, but anonymity was not guaranteed, and they were required to sign their names on the completed questionnaires.

2. Results

Table 2 presents the results for the second study. The postexperimental interviews indicated that the experimental group felt under considerable pressure to "do well" by completing the questionnaire in the manner indicated as desirable by the company president; the control group felt little such pressure. As can be seen from Table 2, the measure of social desirability reflected this pressure. A significant ($p < .01$) difference was obtained between the two groups, with the experimental group completing the Crowne-Marlowe scale in a more socially desirable manner than the control group. As a point of comparison, it should be noted that the social desirability score for the control group is approximately the same as is usually reported for college students under conditions of complete anonymity, while the score for the experimental group is quite high and close to that reported for a group of job applicants who were told that they would be hired on the basis of their Crowne-Marlowe scores (1).

As shown in Table 2, the results are in the predicted direction for all three Contingency Theory measures; however, none is statistically significant and the size of the associated t values is generally small.²

D. DISCUSSION

Several researchers have found that the LPC scale contains two types of items—those measuring nontask, interpersonal characteristics (e.g.,

² Since the range of possible scores is substantially greater on the LPC (16-128) and group atmosphere (10-80) instruments than on the Crowne-Marlowe social desirability scale (0-33), these measures should be more sensitive and more likely to register changes due to the experimental manipulation (5). However, these results clearly show that the Crowne-Marlowe scale detected a significant difference in social desirability, while none of the Contingency Theory measures did.

TABLE 2
STUDY 2 RESULTS

Variable	Total sample			Control group		Experimental group		
	KR-8 ^a	\bar{X}	<i>SD</i>	\bar{X}	<i>SD</i>	\bar{X}	<i>SD</i>	<i>t</i>
Social Desirability	.84	19.75	6.12	16.26	5.60	23.25	4.55	2.74*
LPC	.86	72.75	10.94	70.13	14.12	75.28	6.44	.96
Position Power	.97	10.38	1.75	10.00	1.69	10.75	1.83	.85
Group Atmosphere	.94	67.31	9.82	66.63	12.13	68.00	7.65	.27

^a Kuder-Richardson Formula 8 reliability.* $p < .01$.

warm—cold), and those concerned with task relevant attributes (e. g., efficient—inefficient). Because socially desirable responding might differentially affect these two types of items, the LPC scale was partitioned into “personal” and “task” item subsets, with the use of the results of Shiflett's (8) factor analysis to guide item assignment. The correlations for the first study were then recomputed, and new *t* tests performed between the experimental and control groups of the second study. As for the full 16-item scale, the relevant correlations were not significant and no significant differences were found between the groups.

These results as a whole indicate that social desirability bias did not appreciably affect scores on LPC, group atmosphere, or position power. These findings, therefore, support the study by Fiedler (4), in which no relationship was found between LPC and social desirability. However, they conflict with the suggestion presented in Fiedler's (3) earlier work, that LPC may be primarily a measure of response bias.

Given these results, they seem to provide some hope for organizational social psychologists: apparently not all currently used research instruments are affected by social desirability, as has been suggested by Thomas and Kilmann (9). Furthermore, these results must be considered as encouraging evidence with respect to one psychometric property of Fiedler's measures.

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EXPERIMENTER EXPECTATION AND COMPLIANCE AMONG OBESE FEMALES*

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SUMMARY

A study of compliance in task performance was conducted. It was predicted that when *E* expectations are known, obese *Ss* will comply and demonstrate response inhibition and rejection of conflicting cues where appropriate. The *Ss* were 20 normal weight and 20 obese American female college students. Equal numbers of each weight group were given one of two expectations and also presented with conflicting incidental cues. While obese *Ss* tended to report awareness of incidental cues more frequently, task performance indicated compliance with *E* among obese *Ss* but not among normal *Ss*. Results did not support interpretations of higher performance levels among obese *Ss* as related to oversensitization to external stimuli or to response inhibition deficiency.

A. INTRODUCTION

A recent review of research and speculations relating to obesity (3) has indicated a general confusion in methodology and models in this area. Schachter and Rodin (9) have characterized obese individuals as overly sensitive to and affected by external cues. In order to account for superior performance by obese *Ss* in a variety of nonfood-related situations, such as in tasks involving choice reaction time, immediate recall, and word recognition thresholds, Rodin and Slochower (7) have extended the externality hypothesis and suggested that obese *Ss* may also be more compliant with *E*'s demands than are normal weight *Ss*. Alternately, Singh and colleagues (10, 11) have proposed that superior performance may be explained by a general inability among obese *Ss* to inhibit response once initiated.

There is indication from a variety of sources that compliance may indeed be a relevant psychological variable underlying behavior of obese individ-

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uals. The clinical literature has discussed eating as a compliant behavior motivated by a fear of rejection from a significant other (1, 8). In addition, obese *Ss* have been found to be more easily persuaded than normals by a counterattitudinal message (2) and more compliant to friendly than to nonfriendly *Es* (7).

Results of other studies suggest that obese *Ss* may accept personal cost in order to comply with *E's* expectations. Pliner (5) found that the suggestion to think of something distracting resulted in significantly longer pain latencies for obese *Ss* than for normals when holding hands in cold water, while the reverse was true when the suggestion was not given. In terms of compliance, obese *Ss* may have interpreted *E's* suggestion as the expectation that persons *should* be able to persevere with additional effort and subsequently responded accordingly even at the cost of enduring discomfort for a longer period of time. In a study by Rodin (6) obese *Ss* performed much worse than normals on a proofreading task when there were competing irrelevant stimuli but outperformed normal *Ss* when no competing stimuli were present. While Rodin (6) interpreted these results as supportive of the externality hypothesis, it may be suggested that the addition of competing stimuli created ambiguity as to which set of stimuli the obese *S* was expected to attend in order to do well for *E*. Again, these *Ss* may have accepted a cost (lower performance on the proofreading task) rather than risk failure if attention to the competing stimuli had been critical to meet *E's* expectations.

The purpose of the present study was to provide a direct investigation of perceptual externality, response inhibition deficiency, and compliance as possible factors affecting performance of obese *Ss*. Three principal hypotheses were set forth:

1. When expectations of *E* are known, obese *Ss* will comply with such expectations and do so more frequently than will normal weight *Ss*.
2. When a conflict exists between *E's* expectations and an alternative mode of response which is suggested via incidental cues, overweight *Ss* will still comply even at the cost of a higher performance score while normal *Ss* will choose independent achievement. This latter prediction is a specific test of the externality hypothesis which would predict that obese, rather than normals, would be more responsive to competing cues.
3. When compliance with *E's* expectation requires inhibition of response, obese *Ss* will demonstrate appropriate response style. Thus rather than expecting a deficit in response inhibition which should be characterized by perseveration of a limited set of responses, it was predicted that obese *Ss*

would show high or low variety of response as a direct function of the nature of *E*'s expectation.

B. METHOD

A 2×2 factorial design was used in the present study. *S*'s weight (obese, normal) and *E*'s expectation (high, low variety of response).

1. Subjects

Twenty females of normal weight (deviation of less than 15% from the mean weight for age and height, range = -6% to +10%, $X = +6\%$) and 20 obese females (deviation of more than 15% above weight norm, range = +15% to +39%, $X = +20.4\%$) were randomly selected from volunteers enrolled in Introductory Psychology classes at a large American university. Weight standards were in accordance with Metropolitan Life Insurance tables (4). Course credit was awarded for participation in the study.

2. Test Materials

A booklet containing 25 problems equally divided among five task categories (spatial relation, jumbled sentences, geography, anagrams, and math) was assembled for the experimental task. All booklets contained the same problems, presented in identical order. In addition, every booklet was prefaced by the same cover instruction sheet which included one sample problem with solution for each of the five task types. Written instructions indicated that *S*s could work the problems in any order desired and that 10 minutes would be allowed for work time. At the bottom of each instruction sheet there was a standard space, clearly labeled, for recording of the total number of points scored by the respondent for correctly solved problems.

While problems and instructions were identical for all test booklets, there were two versions of the booklet which differed with respect to incidental cues presented. The incidental cue, the point value of each problem in the booklet, was clearly labeled and appeared to the immediate left of each problem in the test booklet. These point values were distributed so that selection of high-value problems would conflict with *E*'s expectation. In all test booklets administered to *S*s in the Low-Variety Expectation condition, only *one* high-value (5-point) problem appeared in *each* of the five task categories; each task category also contained two moderate-value (3-point) problems and two low-value (1-point) problems. Test booklets administered to *S*s in the High-Variety Expectation condition presented *all five* high-value problems in the third task category (geography), all moderate-

value problems in the second (jumbled sentences) and fifth (math) categories, and all low-value problems in the remaining categories.¹

3. Procedure

The male *E*² telephoned each *S*, and a separate appointment was scheduled. Upon arrival, *S* was thanked for coming and told that her participation was of great importance because the study was part of a research grant and must be completed soon in order to secure further funding. While these were not the true circumstances, this cover story was chosen to try to create the impression that *E* would greatly appreciate *S*'s help and cooperation if given. Each *S* was told that the study concerned "competency interests."

a Experimentor expectation manipulation. During the ingratiation phase, *E* expressed one of two beliefs to *S*: (*a*) *Low Variety of Response Expectation* "It is my hypothesis that most people prefer to do a few things but to do them well", or (*b*) *High Variety of Response Expectation* "It is my hypothesis that most people prefer to do many kinds of things well." Equal numbers of normal and obese *S*s were randomly assigned each expectation condition. The appropriate test booklet containing conflicting incidental cues (point values of problems) was then administered to each *S* in each expectation condition.

b Manipulation checks. Awareness of *E*'s expectation and of incidental cues was checked via a follow-up questionnaire which contained the following two items: (*a*) What was the *E* trying to prove in this study? ("People prefer to do several kinds of things," or "People prefer to do only a few kinds of things.") (*b*) When working through the booklet did you notice any differences in the number of points various questions were worth? (Yes/No.)

Following completion of this questionnaire, *S*s were told that the study actually was investigating the degree to which *S*s are affected by suggestions made by an *E* and the purpose of the incidental cues was explained. They were informed that their performance on the experimental task was not a valid indicator of their general ability levels.

C. RESULTS

The purpose of this study was to test the general hypothesis (Hypothesis 1) that obese *S*s are more compliant with *E* expectations than are normal

¹ Requests for copies of the booklet may be sent to the author at the address shown at the end of this article.

² Appreciation is extended to Michael Whitley for acting as *E* in this study.

weight Ss. In addition, specific hypotheses regarding the nature of such compliance were set forth. Data were analyzed and are presented with relation to each hypothesis.

Hypothesis 2: Compliance with E and use of incidental cues. Congruent with Schachter and Rodin's (9) externality hypothesis, awareness of incidental cues tended to be reported more frequently by obese Ss (17 yes, 3 no) than by normal Ss (12 yes, 8 no), $\chi^2 = 3.142$, $df = 1$, $p = .07$. However, analysis of choice behaviors in response to the incidental cues indicated support for the prediction that obese Ss could and would disregard these cue values when independent achievement behavior was incompatible with E's expectation. The number of high-value problems attempted was significantly lower for obese Ss with the Low Variety Expectation ($\bar{X} = 3.1$ of 5) than for obese Ss with the High Variety Expectation ($\bar{X} = 4.1$ of 5), $t = 2.36$, $df = 18$, $p = .05$. By comparison, the number of high-value problems attempted by normal Ss did not differ for the two conditions (Low Variety Expectation, $\bar{X} = 3.8$, High Variety Expectation, $\bar{X} = 3.5$), n.s.

Hypothesis 3: Compliance with E and control of response variety. Post-task responses indicated that all Ss in each group correctly identified E's expectation. In support of presented hypotheses, variety of response among obese Ss was directly related to the known expectation of E. Obese Ss with the Low Variety of Response Expectation attempted to solve significantly fewer types of problems ($\bar{X} = 3.8$ of 5 task categories) than did obese Ss with the High Variety of Response Expectation ($\bar{X} = 4.6$ categories), $t = 2.67$, $df = 18$, $p = .02$. The number of tasks attempted by normal Ss did not differ in relation to E's expectation ($\bar{X} = 4.1$ for both conditions).

While choice behavior of obese Ss was affected by the experimental manipulations, quality of performance (number of correctly solved problems) did not differ for obese or normal Ss in the two expectation conditions: (a) Obese: Low Variety Expectation, $\bar{X} = 10.5$, or High Variety Expectation, $\bar{X} = 8.7$; (b) Normals: Low Variety Expectation, $\bar{X} = 11.0$, or High Variety Expectation, $\bar{X} = 9.7$.

D. DISCUSSION

The results of the present study suggest that motivation to please and/or to avoid rejection constitutes an important psychological variable which should be taken into account when attempting to interpret performance differences between obese and normal weight Ss that have been observed

among American samples. It remains an empirical question as to whether this variable is salient in cultures which place different evaluations upon obesity as a personal characteristic. While there was some indication that the obese females in this study were more aware, or at least more readily reported awareness, of incidental cues, there was no support for the contention that additional external cues distract or interfere with obese Ss' performance when the actual expectations of *E* are known. Reports of lower performance in the presence of competing stimuli (6) may be less attributable to oversensitivity to external stimulation than to a higher level of motivation to perform well on the task where "correct" performance is not clearly defined.

In addition, the contention that obese Ss are less able to inhibit response once initiated (10, 11) was not supported. Obese Ss demonstrated the ability either to limit or expand response variation in direct accordance with *E*'s expectation.

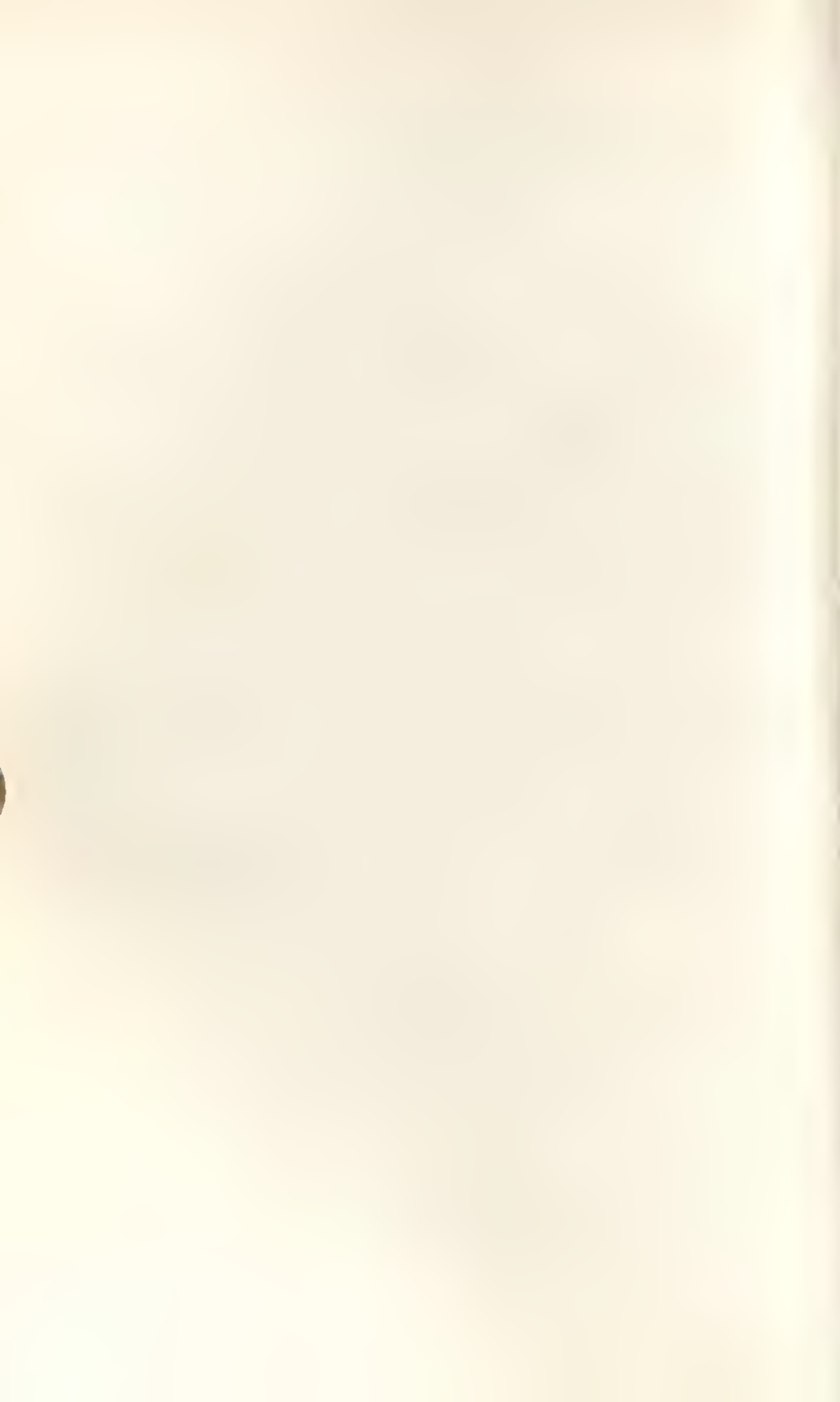
While the cost of compliance is generally not appreciable in studies of this type, under such conditions it appears that obese Ss do, as predicted, place a higher value on acceptance and/or avoidance of rejection from others than on independent success. Performance by normal weight Ss did not vary with relation to *E* expectation. However, it is impossible to distinguish whether this was related to their tendency to report awareness of incidental cues less frequently or if they generally chose the path of independent success in both expectation conditions. Since normal Ss reported awareness of *E*'s expectation as frequently as obese Ss, it seems probable that independence of response associated with less concern for acceptance and/or avoidance of rejection by *E* was a contributing factor affecting their performance.

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THE COMPUTER AS ALTER^{*1,2}

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SUMMARY

An experiment was performed to gather evidence about the tendency of Ss to react to a computer as if it were another person. Forty male and female undergraduates were run at a live CRT console on a series of games in which the computer displayed varying degrees of "intelligence." Recordings made of the spontaneous verbalizations of Ss revealed substantial evidence for the personification of the computer in 39 of the 40 cases. Use of personal pronouns to refer to the computer was greatest for the more "intelligent" computer games.

A. INTRODUCTION

From the standpoint of role theory, conversation is essential for the development of the self. Conversation presupposes the existence of an alter with whom the person can interact through gesture and language. Out of conversational interaction, the self becomes differentiated. Also, the continual active selectivity of response which characterizes the true conversation is said by Mead (2) to be essential for the emergence of thought.

After learning how to converse with a living alter, it is possible to converse internally with oneself—to think in a dialectical way—and also to have a form of pseudo-conversation with nonpersons such as pets, plants, machines, or gods. Within the last decade, a significantly new form of pseudo-conversation has become possible—with the computer as alter.

The differentiating feature of the computer as a nonhuman conversational object lies in its ability to respond to the person as if it were human. It can respond quickly, in linguistic symbols and in a way that is contin-

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¹ Credit is due to Philip Tong for running the Ss for the experiment reported here.

² A preliminary version of this paper was presented at the symposium on Role Theory, "Dramaturgical models applied to persisting psychological problems," American Psychological Association meeting, San Francisco, August 29, 1977.

gent upon the person's prior statements (*cf* 6). Since the computer can convincingly simulate human conversation, it is not surprising that operators of computers should act at times as if the computer were truly another person. Denizens of computer centers are familiar with the giving of names to computers or to particular programs. Also, it is not uncommon for emotional outbursts to occur for which the computer is the target. Stories are often passed around in a half-serious way about the whims and moods of the computer. It is arguable that the computer is the most satisfying nonhuman partner for playing games—from chess to a simulated version of interplanetary war named *STARTREK*—ever to be invented (*cf* 3). The playing of games with the computer is so addictive that many computer centers have had to regulate hours of recreational use of the computer so as not to interfere with more serious operations.

A new type of personality has emerged to fit the interactive potential of the computer—the compulsive programmer. Weizenbaum characterizes these new creatures as follows: "(They are) bright young men of disheveled appearance, often with sunken glowing eyes . . . sitting at computer consoles, their arms tensed and waiting to fire their fingers, already poised to strike, at the buttons and keys on which their attention seems to be riveted as a gambler's on the rolling dice . . . They work until they nearly drop, twenty, thirty hours at a time. Their food, if they arrange it, is brought to them: coffee, Cokes, sandwiches. If possible, they sleep on cots near the computer. But only for a few hours—then back to the console or the printouts" (6, p. 116). The computer is an extraordinarily fascinating object, the more fascinating because it appears to be not just an object, but personified intelligence.

This study provides a report on the sorts of "spillover" conduct displayed by *Ss* at a computer console, which is evidence of personification. It also explores two hypotheses: (*a*) *Ss* might show more evidence of personification in a relatively isolated setting than when many other people are nearby; (*b*) more personification occurs when the computer acts in a way which is relatively more intelligent than when it acts less intelligently.

B. METHOD

1. *Ss and Design*

The *Ss* for this experiment were 40 Wesleyan University undergraduates—20 males and 20 females. *Ss* were paid \$2.00 for participating. *Ss* were randomly assigned to one of five different computer

games and to one of two different room locations, with the constraint that two males and two females be run on each game at each location.

2. Procedure

a. Apparatus. Each *S* was run individually at a CRT console, with typewriter keyboard, which is part of a DEC-10 computer system, operating on a time-sharing basis. A SONY cassette tape recorder with a built-in microphone was placed on the console table, in full view of the *S*.

b. The computer games. The computer games called GUESS are essentially sequential binary-choice matching problems. The *S* chooses a zero or a 1 on each trial, as does the computer. *Ss* attempt to avoid being matched by the computer, winning a trial each time they are not matched and losing each time they are matched. A game is played until the *S* or the computer has 50 points. Seven such games are played in sequence by each *S*.

The computer is programmed to make its choices in a different way for each of the five GUESS routines. For GUESS zero it chooses randomly, with $P(1) = P(0)$. For GUESS 1, GUESS 2, GUESS 3, and GUESS 4, the computer makes its selections on the basis of conditional probabilities derived from tabulations of the *S*'s patterns of choice following specified sequences of events.

For GUESS 1 and GUESS 2, the computer bases its choices on the cumulative frequency of the following conditional events (*SW*) and (*SL*), where *S* is a same or repetition response, *W* is an *S* win and *L* an *S* loss. The computer thus estimates the probability of an *S* repeating a previous choice when the *S* has won that trial and another probability of an *S* repeating a previous choice when the previous trial was a loss. For GUESS 1, the computer chooses its response according to the probabilities thus estimated—it *matches* the probability of a repetition response occurring for an *S*. For GUESS 2, the computer always chooses that response for which the estimated probability is greater—that is, a maximizing strategy is used (*cf* 1).

In GUESS 3 and GUESS 4, tabulations of the following conditional events are used as the bases for estimating probabilities: (*SWSW*), (*S|WSL*), (*S|WDW*), (*S|WDL*), (*S|LSW*), (*S|LSL*), (*S|LDW*), (*S|LDL*), (*D* is a different or nonrepetition response by the *S*). For these games conditional probabilities are estimated which take into account the results of the two previous trials. GUESS 3 employs a matching strategy and GUESS 4 employs a maximizing strategy.

These four routines vary reliably in difficulty. GUESS 2 is so easy as to

be beatable by all *Ss*. GUESS 3 and GUESS 4 are so difficult that less than 25% of *Ss* win a majority of their games. GUESS 1 is of an intermediate degree of difficulty, with *Ss* winning about 40% of the games.

c. Locations. One half of the experimental sessions were conducted in a room which contains 12 terminals and other computer equipment, most of which was being used by other people as the experiments were being conducted. The remaining sessions were conducted in a room in the Psychology Department, which has a single terminal, plus a few small calculators. This room was usually unoccupied, save for the *E* and the *S*.

d. Procedure. Upon the *S*'s arrival at the appropriate location, the *E* logged in and called the proper version of the GUESS game, after which *Ss* operated the console. Instructions for the GUESS game appeared on the CRT. The games were self-paced, with the constraint that the computer usually required one-second between trials to process information. The cumulative score for each game appeared after each trial and total scores were summarized after the seventh game. The average elapsed time for completing the seven games was just under 20 minutes.

No instructions were provided about the tape recorder. The *E* informed the *S* who asked a question about the tape recorder that it was of interest to record anything that might be said during the experiment. Unless directly questioned, the *E* did not speak throughout the procedure.

C. RESULTS

The basic data for this experiment consist of the spontaneous verbalizations of *Ss* as they were recorded. Counts were made of the number of times the *Ss* spoke. Total time and time per minute of speech were also recorded. Finally, a rough analysis was performed of the content of the *S*'s speech during the experiment. Not included in the analysis are questions which the *Ss* asked before the first trial of the experiment or comments made after the last game.

Spontaneous verbalizations were recorded for 39 of the 40 *Ss* in the experiment. *Ss* made an average of 34 comments ($SD = 23$) per session or about 1.5 per minute. The total amount of speech time in an experiment averaged 77 seconds ($SD = 59$ sec), and the average time per minute of speech was about 4 seconds ($SD = 3.5$ sec).

Three-way analyses of variance were performed on the three types of quantifications of speech. The data were cast in a 2 (sex) \times 2 (location) \times 5 (type of game) crossed and balanced factorial design. The analyses yielded no significant effects for sex. *Ss* did spend marginally more time talking in

the more isolated location ($F = 3.93$, 1 and 16 *df*, $p = .10$). The difficulty of the game did not affect any measures of quantity of speech.

For all *Ss* combined, there were 358 pronoun references to the computer, or about 9 per *S*. The most frequent pronoun was "it" (244 times, as in "It hates me"). Next most common was "he" (57), then "you" (51), and finally "they" which occurred six times. One *S* referred to the computer as "Fred." On several occasions the computer was referred to as "that guy." On no occasion did an *S* refer to the computer with the pronoun "she."

The use of personal pronouns ("he" or "you") to refer to the machine occurred most frequently in the GUESS routines which were of moderate difficulty (an average of 3.5 such uses for 24 *Ss* playing these games) and least frequent for the *Ss* playing either the random (GUESS zero) or the easy (GUESS 2) game, (an average of .75 such uses for the 16 *Ss* playing these games). This difference is significant by a Wilcoxon test ($Z = 1.92$, $p < .05$, one-tailed).

Verbalizations could be classified into four basic categories—(a) direct remarks to the computer (such as an apology for responding too rapidly), (b) exclamations (such as "C'mon" or "wow," or an expletive), (c) commentary (such as, "It seems to know what I'm going to do"), and (d) questions to the *E* (such as, "Is there any system to it?"). By far the most common verbalizations were exclamations and commentary. Use of profanity was quite common, with *Ss* expressing their displeasure at being beaten by the machine.

The nature of the responses emitted by *Ss* when playing this game can be best conveyed by inspection of the actual protocols. The following sample protocol is a shortened version of the comments made by a single female *S* playing the GUESS 3 version. (The *S* lost all of the seven games she played. Over all she won only 44% of the trials.) "Hey, I'm winning. Ha!" "Oh rats, it got a point." "Oh, God." "Stupid thing! How does it do this?" "Oh, shoot. It's killing me. Oooh. I lost by 8 points. I think it's just leading me on. Beep beep." "I'm losing by 28. Crap! I'm losing by a lot anyway." "It's just waiting for me to do it. There. There must be some way in which people . . . people change their mind in the exact same pattern." "I'm doing better." "Oh, come on!" "Ooooh! 5 points." "Come on. Oh!" "Ha, ha, ha. I think I've got it fooled. No." "This is fun. I like this! But I'm winning." "You mean there's something to figure? I think there *is* something to figure, but I'm not going to. I'm too impatient." "This stupid machine. It's so dumb." "I'm not so bad . . . comparatively. There we go. It looks at mens' names. It's trying to con us into believing it knows what it's doing. Oh,

come on . . . oops " "Aha. It doesn't . . . I think I do better when I slow down." "Does it record my patterns from the other games so that it knows what I do? I bet it does. I bet it knows what goes on in my head " "It's winning. I keep looking at the scores. I suppose that's healthy, huh? I wonder if that means I'm a noncompetitive person, however I feel about the score " "The eyes get to be glazed." "Ha! Yes, indeed, ladies and gentlemen. Oooh!" "I'm catching up. Oh." "I've been expecting a change." "It has a little mind." "Weird game." "Come on. I'm going to beat you. This can be very devastating, thinking I'm losing to this machine. Think what it'll do to me." "I'm losing terribly at this one. I think my mind is beginning to wander. That could make life difficult." "Ah, well." "Fuck you."

D. DISCUSSION

All of the speech which was exhibited during these experiments was noninstrumental for the Ss. To be sure, the presence of a tape recorder is an implicit role-demand for the emission of speech (*cf* 4), but no feature of the experimental procedures required the particular form and content of the spontaneous verbalizations which were observed.

These results provide evidence for the temporary personification of the computer for tasks such as the ones used in this experiment. In addition, Ss tended to talk more in an isolated setting and to use more personal pronouns to refer to the computer when it displayed greater "intelligence" in its responses. Ss, in general, became highly involved in playing these simple games with the computer. A great deal of affect was displayed in the comments. On several occasions, they asked if a real person was not in fact making the responses for the computer.

In the future, the computer will function as alter for a larger and larger fraction of the young people in our society. Because of the ease with which the computer is cast in the role of another person, it is a mistake to regard the computer as a neutral agent in socialization. Already we have the compulsive programmer as a personality type created by the interactive characteristics of the computer. Perhaps, as in the science fiction story, *2001*, the computer will become not just person-like but god-like. While it is certain that Mead had no experience at all with computers, he may be credited with envisaging this possibility: "It is possible for inanimate objects, no less than for human organisms, to form parts of the generalized . . . other for any given human individual, in so far as he responds to such objects socially or in a social manner . . . Anything—any object or set of

objects, whether animate or inanimate, human or animal, or merely physical — towards which he acts — socially is an element in what for him is the generalized other" (5, p. 213). Because it has the capacity to mimic human conversation, the speculation offered here is that the computer will be recognized as psychologically more powerful as an agent in the development of personality than any other machine, including the automobile and the television set. One can envisage, then, the emergence of a new personality type which is the human reciprocal of the computer as a component of the generalized other.

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EFFECTS OF AFFECTIVE VALUE AND SIMILARITY ON ATTRACTION¹

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SUMMARY

It has been suggested that an information processing analysis of the ubiquitous similarity-attraction relationship predicts that the effects of similarity on attraction are indirect. A reanalysis which views similarity manipulations as conveying relevant information about attraction was subjected to empirical test. Data from 61 male and female undergraduates who rated the attractiveness of persons described by positive or negative personality traits under conditions in which their own personality feedback was either similar but neutral, similar but explicitly positive or negative, or controlled (no feedback) provided a test of the effects of similarity with affective value controlled. Results showed significant main effects for both affective value and similarity indicating that similarity can have direct effects on attraction.

A. INTRODUCTION

The empirical relationship between similarity and interpersonal attraction has been firmly established for several kinds of similarity and across a variety of populations in the United States (4). Byrne *et al.* (6) have also shown the generality of the effect across American, Japanese, Mexican, and Indian samples. Recent research has been more concerned with determining the factors that underlie the similarity-attraction relationship. For example, Fishbein and Azjen's information processing approach to attraction (7) suggests that similarity affects attraction only indirectly. According to this view, perceiving that another has similar traits (attitudes, interests, etc.) increases attraction only because the perceiver usually positively values those traits. In other words, the apparent effect of similarity on attrac-

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¹ Requests for reprints should be sent to the second author at the address shown at the end of this article.

tion is just a special case of a more general effect: the greater the affective value of a person's attributes, the greater the attraction to that person.

In support of this notion, Stalling (11) reported a correlation of .579 between Ss' ratings of pleasantness and similarity (to themselves) for 111 personality trait adjectives. McLaughlin (9) found the typical positive linear relationship between the similarity of personality self-descriptions and attraction, but the relationship between similarity and attraction was not significant when affective value was controlled through an analysis of covariance. It is possible, then, that the tendency for similarity to be correlated with affective value may account for the effects of similarity.

Other studies have attempted experimentally to separate similarity and affective value. Stalling (11) employed a conditioning procedure and found that the affective value, but not the similarity of trait adjectives, influenced conditioning. McLaughlin (10), on the other hand, reported significant effects for both similarity and affective value when the two variables were manipulated factorially.

Perhaps the best controlled study was one reported by Ajzen (2). Ss, who were given neutral feedback about their own personalities, rated their attraction to stimulus persons whose personality profiles were either positive or negative (75% or 25% positive traits). At the same time, these profiles were either similar or dissimilar to the Ss' in that either 75% or 25% of the stimulus person's trait scores were similar to the Ss'. Control Ss judged the stimulus persons without receiving any feedback about themselves. The results for attraction ratings revealed a significant interaction between the affective value of the stimulus person's profile and similarity (similar, dissimilar, and control). The results were open to several interpretations, but Azjen noted that when the control groups were excluded from the analysis the interaction became nonsignificant, leaving only a main effect for affective value. It was concluded that similarity had little effect on attraction independent of affective value. In summary, the natural correlation between the two variables, the consistent finding of strong effects for affective value, and the inconsistent effects of similarity have been taken as evidence for the informational approach to attraction (7).

It must be noted, however, that it is not inconsistent with the information processing point of view for similarity itself to affect attraction. Indeed, experimental manipulations designed to vary similarity convey information. The critical problem is to determine under what conditions this information is positively valued with respect to the attraction dimension.

These considerations suggest that a more appropriate test of the effects of similarity would involve attraction judgments of positive or negative stimulus persons *versus* judgments of positive or negative stimulus persons who are also similar. Manipulation of the degree of similarity (e.g., 75% or 25% traits in common) is less relevant to answering the basic question.

Azjen's similarity manipulation itself is also open to question from an informational point of view. His Ss always received neutral personality feedback so that their profiles showed six positive and six negative traits with numerical rating that summed to zero. But the profiles for the similar stimulus persons were explicitly positive or negative, i.e., nine or three of the 12 traits were positive and the total scores were either +14 or -14. Thus the information that *S* was similar to the stimulus person on nine of 12 traits was confounded with the information that *S* was dissimilar on overall score. To the extent that both pieces of information are effectively integrated into attraction ratings, such a manipulation is likely to attenuate any effects of similarity.

The experiment reported here tests the independent effects of similarity on attraction by relying heavily on Azjen's method while using the control groups as a point of comparison. In addition, the study includes a similarity manipulation in which all the information conveyed to Ss implies similarity. If such similarity information is both positively valued and relevant to the attraction dimension, it should increase liking.

B. METHOD

1. *Subjects and Design*

A total of 70 male and female undergraduate students who received course credit for their participation served as Ss. A 2×3 factorial design was employed with the following variables: (a) description (positive *versus* negative personality descriptions of the stimulus person), and (b) similarity of the stimulus person (control, similar-neutral, and similar-explicit). Control Ss judged the stimulus person solely on the basis of a personality profile. Similar Ss also received feedback about their own personality traits. The feedback was contrived by the *E* to show the *S* and the stimulus person as possessing a high proportion of similar traits. In the similar-neutral condition, the Ss' overall profile was neutral. In the similar-explicit condition, the Ss' overall profile was explicitly positive or negative in the same direction as that of the stimulus person.

2. Procedure

Ss participated in the experiment individually. The study was described as a study on impression formation, and Ss were told that another person had taken a personality test at a previous time and that the experiment involved having *S* look at the resulting profile in order to answer a few questions about the stimulus person. Ss were further told that in order to understand better the basis of the personality profile, they would take the same personality test.

The test administered to the Ss was very much like that used by Azjen (2). It consisted of 100 items from the MMPI which were randomly selected except that items concerning bodily functions, sex, and overt paranoid reactions were omitted.

After completing the test, Ss in the two feedback conditions waited for a few minutes while the *E* supposedly scored the test in another room. Ss were then presented with a bogus personality profile, said to be their own. After reviewing this profile, Ss reviewed the profile of the stimulus person. Ss in the control groups went through the same procedure except that their profiles were not scored and they received no feedback about themselves.

Personality profiles were presented in the form of scores ranging from +3 to -3 for each of 12 bipolar trait adjectives: unselfish, logical, efficient, friendly, reliable, fair, cooperative, rational, careful, tolerant, conscientious, and mature. These adjectives and their polar opposites anchored a graphic scale on which a number between +3 and -3 was circled to indicate the individual's standing on a particular trait. All ratings were either positive or negative. Although zero was on the scale, it was never used. Total profile scores were not indicated.

The profile of the positive stimulus person showed nine of the 12 traits to be in the positive direction with the scores summing to +14. The negative stimulus person had negative scores on nine of the 12 traits and a total score of -14.

Profiles presented to Ss as their own in the similar-neutral condition were similar to the stimulus person's profile: nine of the 12 trait scores were in the same direction on both profiles. But, overall, these Ss' profiles were neutral, since they contained an equal number of positive and negative ratings and summed to zero. This manipulation was essentially the same as that employed by Azjen (2).

Similar-explicit feedback was provided to Ss via a personality profile with 10 of the 12 traits in the same direction as the ratings for the stimulus

person.² In addition, the profile for the S was similar to the stimulus person's profile in terms of the number of positive traits (nine or three) and the overall score (+14 or -14).

Finally, all Ss completed a questionnaire which included as attraction measures the Interpersonal Judgment Scale (IJS (3)) and the five seven-point semantic differential scales used by Ajzen (2): harmful-beneficial, foolish-wise, dirty-clean, bad-good, and sick-healthy. The concept "This person is" was rated on these evaluative scales. A single final scale assessed the perceived similarity between the S and the stimulus person on a seven-point scale ranging from "very similar" to "not at all similar." All Ss were thoroughly debriefed upon completing the experiment.

C. RESULTS

During debriefing, Ss were asked to indicate what they thought of their own personality profile. Ten Ss expressed some suspicion about the profile, so the data from these Ss were dropped from further analyses, leaving a total of 60 Ss, 10 per cell in the design.

The means for perceived similarity, the Interpersonal Judgment Scale and the total semantic differential scores are shown in Table 1. For similarity ratings, a 2×3 analysis of variance revealed that the main effects of positive *versus* negative descriptions ($F = 2.92$, $df = 1/54$, $p = .10$) and similarity ($F = 3.14$, $df = 2/54$, $p = .06$) were qualified by a marginally significant interaction ($F = 2.95$, $df = 2/54$, $p = .07$). *Post hoc* comparisons performed on this interaction indicated that there were no perceived similarity differences between the control condition and either of the similarity feedback conditions for positive descriptions. However, for negative descriptions the stimulus person was seen as significantly more similar in the similar-explicit condition than in the control condition ($p < .01$) with the mean of the similar-neutral condition falling in between. The similarity ratings for positive *versus* negative descriptions differed significantly only in the control condition ($p < .01$). In summary, these results indicate that while positive and negative stimulus persons were seen as equally similar in the experimental conditions, significant increments in perceived similarity were found only for negative personality descriptions.

² It is not mathematically possible to have nine of 12 traits positive (or negative) and at the same time have 75% similarity with another list on which nine of 12 traits are positive (or negative). Likewise, it was not possible to have 84% similarity in the similar-neutral conditions.

Responses on the semantic differential scales were scored from 1 to 7 and summed so that higher scores indicated greater attraction. A 2×3 analysis of variance revealed significant effects for personality descriptions ($F = 44.79$, $df = 1/54$, $p < .001$), similarity ($F = 11.14$, $df = 2/54$, $p < .001$), and the interaction ($F = 5.14$, $df = 2/54$, $p < .01$). *Post hoc* comparisons performed on the interaction showed that positively described stimulus persons were significantly more attractive than their negatively described counterparts in the control condition ($p < .01$) and in the similar-neutral condition ($p < .01$), but not in the similar-explicit condition. For negative stimulus persons, attraction was significantly greater in the similar-explicit condition than in the similar-neutral ($p < .05$) condition, which, in turn, produced more attraction than the control condition ($p < .01$). There were no significant differences among these means for positive stimulus persons.

On the Interpersonal Judgment Scale (IJS) there were also significant main effects for both personality descriptions ($F = 25.84$, $df = 1/54$, $p < .001$) and similarity ($F = 7.60$, $df = 2/54$, $p < .01$), but the interaction only approached significance ($F = 2.55$, $df = 2/54$, $p < .10$). For comparison with the semantic differential findings, *post hoc* tests were computed for the interaction and revealed an only slightly different pattern of results. Here positive stimulus persons were more liked than negative stimulus persons only within the control condition ($p < .01$). For negative descriptions, attraction ratings were significantly greater in both the similar-explicit and similar-neutral conditions than in the control condition ($p < .01$), but the two types of similarity feedback did not differ significantly from each other. Again, there were no reliable differences among the liking scores as a function of similarity for positive stimulus persons.

TABLE 1
MEANS FOR SIMILARITY, INTERPERSONAL JUDGMENT SCALE (IJS), AND SEMANTIC
DIFFERENTIAL (SD) BY TREATMENT CONDITIONS

Similarity feedback	Similarity	IJS	SD
Positive stimulus person			
Control	4.6	9.8	26.8
Similar-neutral	4.0	10.7	28.1
Similar-explicit	4.7	10.8	28.2
Negative stimulus person			
Control	2.7	5.3	18.6
Similar-neutral	3.9	8.9	22.8
Similar-explicit	4.8	8.8	26.1

D. DISCUSSION

The basic finding of this study, that similarity had a significant effect on attraction with affective value controlled, leads to the conclusion that the effects of similarity on attraction can be direct. The correlational evidence cited earlier (9, 11) shows that similarity and affective value are likely to be confounded in most situations. In the case of attitude similarity, for example, it would probably be impossible to separate them, since it is unlikely that an individual would hold attitudes that he or she evaluated negatively. Nevertheless, the effects of similarity in this study were not trivial: for both measures of attraction, the differences in the attraction ratings for positive *versus* negative stimulus persons became nonsignificant at some level of similarity.

The increments in attraction resulting from similarity were limited to negatively describing stimulus persons. Clearly, the absence of such an effect for positive stimulus persons is due to the high degree of assumed similarity with positive stimulus persons as shown by the similarity ratings in the control condition. Manipulated similarity added nothing to this assumed similarity and hence could not have any effect on attraction. From an informational point of view manipulated similarity information was redundant (or noninformative), given assumed similarity, and would not be expected to influence attraction. It is curious that Azjen (2) did not find the same sort of effect, although it is not possible to determine from his report if there might have been a trend in that direction.

The results of the present study closely parallel the results reported by Azjen in other respects. The means for the two control and similar-neutral conditions are close to the means for the corresponding conditions in the earlier study (2, p. 377), but the effects of similarity are not evident there because a detailed analysis including the control conditions was not reported. It is important to note, however, that Azjen's study contained a role-play condition in which Ss responded to the experimental materials as they thought a person in the situation would respond. That the results of the role-play conditions did not differ from the results for the experiment is convincing evidence that the findings of these studies are not due to any unique effects associated with receiving personality feedback.

The similar-explicit feedback used in the present study increased attraction relative to similar-neutral feedback for negative stimulus persons on the semantic differential, but not on the IJS. It will be recalled that informational analysis of these two manipulations showed that only

similar-explicit feedback provided Ss with information that uniformly indicated similarity. It is possible that the unconfounded similarity information conveyed by this manipulation had differential effects on the two dependent variables due to the multidimensional nature of attraction. In fact, McLaughlin's findings (10) strongly suggested to him that while affective value affected attraction judgments on a task-oriented dimension, similarity affected judgments along a socioemotional dimension. This interpretation is compatible with the data of the present study since the IJS partly taps task-oriented attraction, while the semantic differential items seem to measure more socioemotional components.

Although the direct effects of similarity have been emphasized, it should be pointed out that an informational analysis does not presuppose that similarity will have universally positive effects on attraction. The Fishbein and Azjen model (7) suggests that similarity will facilitate attraction only when S strongly believes the information and, even then, only in contexts in which similarity itself has a positive affective value. In the same vein, Anderson's information integration theory (1) would predict direct positive effects of similarity only when the similarity information has a positive scale value and a nonzero weight on the attraction dimension. The conditions under which these constraints are met are in need of clarification, since it has been demonstrated in at least one study (12) that similarity can decrease attraction.

Whether similarity has direct effects or not does not distinguish between informational (8) and reinforcement (5) interpretations. Indeed, Fishbein and Azjen (7) state that neither approach would predict direct effects on liking. It seems now that the finding of such effects should clarify both models and lead to a search for an understanding of the nature and extent of the impact of similarity. No single approach is likely to be true although some will certainly be more heuristic than others.

As in all experiments like the one presented here, affective value, of course, had strong effects. It is worth restating that such results imply that in most situations the similarity-attraction relationship can be largely accounted for by affective value. It can be expected that information about similarity will generally be less polarized and/or less informative than information regarding the positive or negative traits of another.

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CROSS-CULTURAL NOTES

Under this heading appear summaries of studies which, in 500 words or less, provide comparable data from two or more societies through the use of a standard measuring instrument, additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, 106, 121-122.

CROSS-CULTURAL COMPARISONS IN INTERPERSONAL ATTRACTION OF FEMALES TOWARD MALES*¹

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Previous studies² in the area of attraction and mate selection have concentrated on responses of Western people to members of the opposite sex. Since there has been a paucity of investigation on attractiveness of non-Western people, it is uncertain whether there is any universal agreement as to the judgments of physical attractiveness and whether the features of attraction are of the same importance to Western and non-Western females. The present study attempted to provide possible answers to the above questions. First, it was hypothesized that females from different cultures would judge 10 photographs of modern Greek males in a similar manner on the basis of physical attractiveness and, secondly, that the females from the two cultures would attach different importance to the physical and psychological traits of attraction. The stimuli and the timing of the tasks were based on a large scale pilot study carried out to establish the content validity and the suitability of the measuring technique used in the main study.³

* Received in the Editorial Office, Provincetown, Massachusetts, on April 17, 1978. Copyright, 1979, by The Journal Press.

¹ Requests for reprints should be directed to the first author at the address shown at the end of this article.

² Berscheid, E., & Walster, E. H. Physical attractiveness. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 7). New York: Academic Press, 1974.

³ Thakerar, J. Pilot study in cross-cultural comparisons in interpersonal attraction of females toward males. Unpublished study, Department of Psychology, The Hatfield Polytechnic, Hatfield, England, 1976.

The Ss were 17 English and 17 Eastern females. The Eastern group was composed of 10 Chinese and seven Indian females. The cultures were combined as the sample size from either culture was not large enough to form an experimental group. Further it was expected that judgment of the opposite sex would be more similar between the Chinese and Indian females and the lack of statistically significant differences between the rankings of Chinese and Indian females confirmed this expectation. The Ss were randomly chosen from the student population at the Hatfield Polytechnic. They were all single, were proficient in English, and had a mean age of 21.7 years.

All the Ss were instructed to rank the 10 front-facial, black-white modern Greek male photographs on the basis of physical attractiveness. Secondly, they were given 36 cards with a trait printed on each card to rank them in order of preference: i.e., giving highest rank to the trait they look for first in a boy they would like to go out with.

The two groups tended to rank the photographs in the same order ($\rho = .89$, $p = < .001$). This result may be interpreted to mean that the photographs of Greek men were judged in a similar manner on the basis of physical attractiveness by both English and Eastern female students. With the use of the Mann-Whitney U test for the second part of the study, it was found that only eight traits were nonsignificant (interesting conversation, age, outgoing, etc.); five were significant at the .05 level (voice quality, drinking, generosity, etc.); six at the .01 level (honesty, sexy-body, frankness, etc.), and 17 at the .001 level (height, confidence, warmth, etc.). The results further showed that English female Ss attached more importance to physical traits (eyes, hair, height, etc.), while Eastern female Ss attached more importance to psychological traits (intelligence, kindness, confidence, etc.).

The evidence then clearly supports the two hypotheses. It could therefore be concluded that although the overall judgment of physical attractiveness was similar, the actual rubric of interpersonal heterosexual attraction for females from different cultures was more varied.

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SOME OBSERVATIONS ON PORTEUS MAZE PERFORMANCE AMONG THE CAMPA INDIANS OF EASTERN PERU^{*1}

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This paper describes performances of five adult Campa Indians on Porteus maze tests.² The Campas are a tribal people who typically live in small two- or three-family hamlets scattered through the tropical forests of Eastern Peru from about latitude 9° to 12° South of the Equator and longitude 73° to 75° West. They subsist by cultivation, fishing, and hunting.

The Porteus maze test provides a nonverbal assessment of ability to formulate and execute a plan, consisting of 14 mazes of consecutively increasing complexity, requiring some aptitude in abstract spatial relations for successful performance. To complete each maze, Ss must mark the shortest continuous path through each maze without crossing lines or entering "dead-ends."

With one exception, Ss were both illiterate and unacculturated. None had ever taken a paper and pencil test and most had little or no previous experience with paper and pencil. Because of mechanical unfamiliarity with such materials, Ss held pencils with an awkward grasp that contributed to errors such as accidental crossing of lines, thus lowering test scores. Typically, Ss kept their wrists off the table, had only a precarious hold of the pencil without the control and stability that accompany the firm grasp, hand on the table, in the characteristic Western manner. Additionally, testing among the Campas never proceeded in isolation. Curious onlookers clustered about, and Ss' children often interrupted their parents during testing. These distractions also increased errors.

Although all Ss were in their thirties or older, their raw scores on the test ranged from 7.5 to 14. When compared to the North American middle class norm group, their mental ages ranged from 6.5 to 12.5 years.

* Received in the Editorial Office, Provincetown, Massachusetts, on April 27, 1978. Copyright, 1979, by The Journal Press.

¹ The author is grateful for assistance given by Drs. Dorothy S. Laird and David F. Bjorklund.

² Arthur, G. A Point Scale of Performance Tests (rev. form II). New York: Psychological Corp., 1947.

Given their lack of familiarity with pencil, paper, and the spatial relations embodied in the test, it is no surprise that Campa Ss performed poorly when compared to the North American norm group. The intellectual operations of an abstract spatial nature built into the test are so remote from the lives of these Indians that comparisons with the norm group seem almost absurd. Adults must devote their energies to subsistence activities in order to survive. Only recently has formal education become available to young Campas. The physical and social requirements of daily life are therefore profoundly different from our own, and so the intellectual requirements are strikingly different as well. If we recall that for meaningful comparisons of performances, norm groups must be relevant,³ the case for noncomparability seems clearly apparent.

It is generally agreed that the Porteus mazes comprise a reasonably culture-free test of intelligence which requires no specific knowledge for adequate performance. Nevertheless, cultural differences, in simple mechanical skills, such as experience with paper and pencil or even the proper way to hold a pencil, can substantially affect performance scores, thus artificially increasing differences between cultures in test performance. A large proportion of the differences in observed performances on tests of a culture-free nature like the Porteus mazes may be due to mechanical factors unrelated to intelligence.

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³ Seashore, H. G., & Ricks, J. H., Jr. Norms must be relevant. *Psychol. Corp. Test Serv. Bull.*, 1950, 39, 16-19.

REPLICATIONS AND REFINEMENTS

Under this heading appear summaries of studies which, in 500 words or less, provide useful data substantiating, not substantiating, or refining what we think we know; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfilm Publications.

The Journal of Social Psychology, 1979, 108, 125-126.

THE JUST WORLD AND THE TENDENCY TO INFER OUTCOMES FROM THE MORALITY OF AN ACTION: A SECOND CONFIRMATION*¹

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In research on American Ss, Lerner² found a tendency to think well of those who have fared well and denigrate those who have suffered, which Lerner attributed to belief in a just world. Kaplowitz³ noted that belief in a just world should also cause people to infer favorable outcomes from moral actions and unfavorable outcomes from immoral actions, and confirmed this prediction with both survey and experimental data. The current study retests Kaplowitz's proposition using a different methodology.

We used 110 Ss⁴ (37 male students, 45 female students, and 28 male prisoners) and gave each a set of ostensibly true but actually fictitious stories. For each of four critical stories, the S was to determine which of two outcomes, one favorable to the protagonist or an unfavorable one, "actually" occurred.

There were two versions of each critical story. The versions were identi-

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¹ Data and outlines of the critical stories may be obtained from the author at the address listed at the end of this article. The author thanks T. Conner, E. Thompson, S. F. Camilleri, L. Messé, M. Marazita, and D. Williams for advice and assistance.

² Lerner, M. Evaluation of performance as a function of performers reward and attractiveness. *J. Personal. & Soc. Psychol.*, 1965, 1, 355-360.

³ Kaplowitz, S. The influence of moral considerations on the perceived consequences of an action. *J. Conflict Resol.*, 1977, 21, 475-500.

⁴ Four others were eliminated because of suspicion or missing data.

cal with respect to (a) the action taken by the protagonist (in several stories this action was illegal), (b) the possible outcomes specified and; (c) those factors which would influence the outcome. In one version, (morally acceptable) circumstances either mitigated the protagonist's guilt or made the action praiseworthy. In the other (immoral) version, circumstances aggravated the protagonist's guilt. In order to hold constant the factors influencing the outcome, while varying morality, instead of asking how severely the protagonist was punished for an action, we asked if he/she was caught. Ss were given one of two forms. Each form contained the morally acceptable version of two critical stories and the immoral version of the other two.

When all four critical stories were combined 58.5% of the responses to the morally acceptable versions expected favorable outcomes as compared with 50.5% of the responses to the immoral versions. This overall effect held for each of our three populations and a Population \times Form \times Version ANOVA found only the predicted version effect at all significant ($F = 3.43$, $p = .07$).

While the overall prediction was confirmed, there were some anomalies. While prisoners solidly supported the hypothesis on three critical stories, they showed an "unjust world" effect with the story in which a hardware store worker steals from his boss. (By contrast, that story showed the strongest just world effect for the other groups.) While this may be chance, it follows from combining the finding⁵ that empathy leads people to attribute an actor's behavior to the situation, rather than to the actor, with the claim⁶ that attributing to the person, not the situation, leads to the just world effect. Hence this just world effect may not occur in situations resembling those in which the S has experienced injustice.

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⁵ Regan, E. & Totten, J. Empathy and attribution. *J. Personal. & Soc. Psychol.*, 1975, 32, 850-856.

⁶ Apsler, R. & Friedman, H. Chance outcomes and the just world: A comparison of actors and observers. *J. Personal. & Soc. Psychol.*, 1975.

STABILITY OF INTERNAL-EXTERNAL CONTROL AS MEASURED BY THE ROTTER SCALE¹

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Lefcourt² has observed that much of the research with the Rotter I-E scale implies that locus of control might be a stable attribute of persons. This would clearly be an improper inference in light of findings that clinical intervention can alter people's control orientation.³ There is, however, little evidence concerning the stability of I-E among nonstudents under natural conditions over a fairly lengthy time period.

In the present study, longitudinal, mail-questionnaire data were gathered from a random sample of 500 graduates of a small, coeducational liberal arts college who were surveyed at three times: T_1 , prior to graduation in the Spring of 1975; T_2 , about six months after graduation in the Fall of 1975; and T_3 , about 18 months after graduation in the Fall of 1976. A total of 247 respondents returned all three I.D. numbered surveys.

Three I-E scale items (5, 10, and 23) explicitly concerned with educational settings were excluded from the analysis on the basis of previous findings.⁴ At each time, the average number of external responses to the 20 items was as follows: T_1 (\bar{X} 10.09, σ = 4.29); T_2 (\bar{X} = 10.20, σ = 4.55); T_3 (\bar{X} = 9.91, σ = 4.74). None of the differences between these means was statistically significant. Consistent with previous findings, men (N = 80) were significantly lower on external responses than women (N = 167) at all

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² Lefcourt, H. M. *Locus of Control: Current Trends in Theory and Research*. New York: Wiley, 1970. P. 111.

³ Diamond, M. J., & Shapiro, J. L. Changes in locus of control as a function of encounter group experiences. *J. Abn. Psychol.*, 1973, 82, 514-518.

⁴ Little, C. B. Dimensionality of the internal-external control scale: Some further evidence. *J. Genet. Psychol.*, 1977, 131, 329-330.

three times: $T_1 [t(245) = 2.99, p < .003]$; $T_2 [t(245) = 2.07, p < .039]$; and $T_3 [t(245) = 2.85, p < .005]$.

For the total sample, intercorrelations among the scale scores at the three times were T_1 with $T_2 = .64$, T_2 with $T_3 = .69$, and T_1 with $T_3 = .64$ (all $p < .001$). The same correlations were very similar when controlled for sex. These r values are well within the range (.49 to .83) reported by Rotter over one or two months and slightly higher than the .55 for high school students over eight months found by Zerega *et al.*⁶

Data in this study indicate that even in a very homogeneous sample, while group mean Locus of Control scores remained fairly stable, correlations at the individual level reflected some instability from one time to another over two and one-half years. Less than 50 percent of the variation in any subsequent locus of control scores was explained by variation in a previous one.

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⁵ McInnes, E., Nordholm, L. A., Ward, C. D., & Bhanthumnavin, D. L. Sex and cultural differences in perceived locus of control among students in five countries. *J. Consult. & Clin. Psychol.*, 1974, 42, 451-455. The sex ratio of the present sample is consistent with that of its population.

⁶ Rotter, J. B. Generalized expectations for internal versus external control of reinforcement. *Psychol. Monographs*, 1966, 80(1), Whole No. 609. Zerega, W. D., Jr., Tseng, M. S., & Greener, K. B. Stability and concurrent validity of the Rotter internal-external locus of control scale. *Educ. & Psychol. Meas.*, 1976, 36, 473-475.

SOME EFFECTS OF THE INTERACTION BETWEEN LOCUS OF CONTROL AND PERCEIVED VOLUNTARINESS OF PARTICIPATION*

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Several recent studies have demonstrated an interaction between locus of control and certain characteristics of educational situations.¹ They have not, however, explored the process by which such interactions are mediated. It may be suggested that the individual's perception of the situation may function as a mediating factor, and that the perception of the voluntariness of one's own participation in a situation may be particularly relevant to locus of control. It is reasonable to expect that internals, who believe that outcomes are under their own control, would perform best in situations which they believe they have entered voluntarily, whereas externals, who believe outcomes are caused by chance or other individuals, would do relatively well when they believe their participation to have been coerced.

An in-service course on "Black Experience and Culture" presented to staff in a public school system provided evidence relevant to this hypothesis. Because there was some uncertainty about whether the course was mandatory, participants varied in their perception of the voluntariness of their own participation. In response to a questionnaire item given at the start of the course, 46% of the 70 participants who responded stated that the course was "required for all," while the remaining respondents stated that it was either "strongly recommended" (49%) or "optional" (6%).

* Received in the Editorial Office, Provincetown, Massachusetts, on January 19, 1978. Copyright, 1979, by The Journal Press.

¹ "Internals" have been found to perform better in situations in which they directed and controlled their own performance than in those in which attention, praise, and direction were provided by tutors or teachers (Bugental, D. B., Whalen, C. K., & Henker, B. Causal attributions of hyperactive children and motivational assumptions of two behavior-change approaches: Evidence for an interactionist position. *Child Devel.*, 1977, 48, 874-884. Daniels, R. L., & Stevens, J. P. The interaction between the internal-external locus of control and two methods of college instruction. *Amer. Educ. Res. J.*, 1975, 13, 103-113. Baron, R. M., Cowan, G., Ganz, R. L., & McDonald, M. Interaction of locus of control and type of performance feedback: Considerations of external validity. *J. Personal & Soc. Psychol.*, 1974, 30, 285-292).

Course outcomes were assessed with pre and post multiple-choice tests covering the historical, sociological, and psychological factual content of the course, pre and post essay tests covering applications to hypothetical situations, and a final questionnaire, asking for participants' own evaluations. "Locus of control" was assessed with the Rotter scale²; participants were divided at the median (9) for analyses.

Out of five evaluation items, one, referring to "others' satisfaction" showed a very slightly significant interaction ($F, 1,48 = 3.72, p < .10$). Among those believing the course to be required, externals scored higher than internals (2.69 *vs.* 2.38), while among those believing it to be not required, internals scored higher than externals (2.71 *vs.* 2.54). Analyses of covariance of the posttest scores, with pretest scores as covariates, showed a similar interaction for the essay test but not the multiple-choice test ($F, 1,58 = 6.89, p < .05$). Externals scored higher than internals if they saw the course as required (27.58 *vs.* 23.01), while internals scored higher than externals if they saw it as not required (28.11 *vs.* 24.90).

If further research should confirm this interaction, it will support the implication that theories or models attempting to identify situational factors which are consistent with individuals' internal or external orientations should include their perceptions of the situations as crucial mediating factors. Perception of the voluntariness or mandatoriness of the situation is only one such factor; many others are conceivable. A situational factor can have an effect on an individual's behavior only as it is mediated through that individual's perceptions; therefore such perceptions should become an integral part of attempts to predict interactive person-environment effects.

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² Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychol. Monog.*, 1966, 80, 1-28.

ALCOHOL, ASSERTIVENESS, AND FEMALE SOCIAL DRINKERS*

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JULIAN BARLING AND KEVIN BOLON

Recent research concerning the effects of alcohol suggests that cognitive or social factors, rather than alcohol *per se*, may affect subsequent behavior.¹ One psychological variable that is commonly held to increase following alcohol consumption is assertiveness. Nonetheless, Wilsnack² found that females' concern with power and assertiveness was reduced following alcohol consumption. That study is inadequate for a number of reasons: changes in assertiveness were measured on the TAT; the same amount of alcohol was administered to each *S* regardless of body weight; the possibility of social/cognitive factors influencing behavior was ignored; the study was conducted in a nonexperimental situation; and finally the experimental design, allowing only for a "wet" *versus* a "dry" group, was inadequate. The present study, therefore, was performed to assess the effects of alcohol and cognitive/social factors on females' assertiveness.

Twenty-four female volunteers (\bar{X} age = 19.0 years; $SD = 2.19$), all social drinkers, completed the 30-item Rathus Assertiveness Scale (RAS), which has been shown to be reliable and valid.³ Four weeks later, they were randomly assigned to one of two groups in which they were informed that they were drinking either an alcohol or a plain beverage. Half of each group actually received an alcohol mixture (.5 gms ethanol/1 kg body weight with one part alcohol to five parts orange juice); the others drank orange juice only. Each polystyrene cup was smeared with brandy, and two drops of brandy added to each mixture, to enhance the placebo effect. All subjects had not consumed anything for five hours prior to posttesting. After 20 minutes were allowed for consumption of the beverage, and 20 for

* Received in the Editorial Office, Provincetown, Massachusetts, on March 2, 1978. Copyright, 1979, by The Journal Press.

¹ Wilson, G. T. Alcohol and human sexual behavior *Behav. Res. & Ther.*, 1977, 15, 239-252; Wilson, G. T., & Abrams, D. Effects of alcohol on social anxiety and physiological arousal: Cognitive versus pharmacological processes. *Cogn. Res. & Ther.*, 1977, 1, 195-210.

² Wilsnack, S. C. The effects of social drinking on women's phantasy. *J. Personal.*, 1974, 42, 43-61.

³ Rathus, S. A. A 30-item schedule for assessing assertive behavior. *Behav. Ther.*, 1973, 4, 398-406.

absorption, the Ss again completed the RAS under the appropriate experimental conditions.

A 2×2 (alcohol \times expectancy) covariance analysis, with the pretest scores as the covariate, was performed. No significant alcohol ($F = 1.77$, $df = 1.19$, $p > .05$) or expectancy ($F = .01$, $df = 1.19$, $p > .05$) main effects or any interaction effects ($F = .13$, $df = 1.19$, $p > .05$) were yielded.

The present results do not support Wilsnack's previous findings, since alcohol *per se* did not influence assertiveness as measured on the RAS. Two factors may account for the difference between the results of the present study and those of Wilsnack. First, while the present study utilized a standardized research instrument, Wilsnack relied on responses to the TAT as the dependent variable. Second, Wilsnack found a decrease in assertiveness in a party atmosphere, rather than the experimental conditions prevailing in the present study. Together with the nonsignificant results of the present study, the fact that previous research⁴ has shown alcohol to influence behavior in social rather than solitary situations provides indirect support for the affects of social/cognitive factors in influencing behavior following alcohol consumption.

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⁴ Phoner, P., & Cappell, H. A comparison of social and solitary drinking. *J. Abn. Psychol.*, 1974, 83, 418-425.

UTILITY OF THE DEMAND CHARACTER CONCEPT ITS APPLICATION TO THE RESULTS OF THE ALLEN AND POTKAY AGT-SIGNIFICANT EVENTS STUDY*

Western Illinois University

BEN P. ALLEN¹ AND CHARLES R. POTKAY

Following instructions by Allen and Potkay,² Ss employed words to describe themselves (Adjective Generation Technique, AGT) and recorded on each of 47 days any events that happened to them which they deemed significant. The hypothesis that there would be strong positive relationship between favorability of self-descriptions and favorability of significant events was confirmed. Bem has asserted that results of such research are due to "demand character," which implies that whenever two kinds of responses are obtained from the same Ss on the same occasion, any relationship observed between the two would be due to (a) Ss' observations of a connection between the two responses, (b) Ss' assumptions that *E* expected a relationship between the two responses, and (c) Ss' willingness to *cooperate* by demonstrating the relationship.³ If "demand character" did influence the Allen-Potkay results, experimental Ss given the original Allen-Potkay instructions would be expected to "see" a connection between self-descriptive and significant event responses and should thus select the hypothesis that "favorability of self-descriptions is positively related to favorability of significant events" as the one that the *E*s were interested in confirming. On the other hand, Ss not given Allen-Potkay instructions should be no more likely to select that hypothesis than others when asked to select a hypothesis that, in their opinion, would be endorsed by *E*s.

* Received in the Editorial Office, Provincetown, Massachusetts, on March 13, 1978. Copyright, 1979, by The Journal Press.

¹ Reprint requests should be sent to the first author at the address shown at the end of this article.

² Allen, B. P., & Potkay, C. R. The relationship between AGT self-description and significant life events: A longitudinal study. *J. Personal.*, 1977, 45, 207-219.

³ Bem, D. J. Predicting more of the people more of the time: Some thought on the Allen-Potkay studies of intraindividual variability. *J. Personal.*, 1977, 45, 227-333. Rosnow, R. L., Goodstadt, B. E., Suls, J. M., & Gitter, A. G. More on the social psychology of the experiment: When compliance turns to self-defense. *J. Personal. & Soc. Psychol.*, 1973, 27, 337-343.

Twenty-two experimental Ss were asked to (a) examine the instructions and materials given to the original Allen-Potkay Ss, (b) rate each of seven hypotheses as to the likelihood that it was the one that Allen and Potkay were interested in confirming (100 point probability scale), and (c) select the one hypothesis Allen and Potkay were interested in confirming. Twenty-five control Ss were also asked to examine the seven hypotheses, but they were given neither the Allen-Potkay instructions nor other information so there were no cues to bias them in favor of one hypothesis. Instead, the control Ss were asked simply to (a) rate each hypothesis (100 point scale, as to the likelihood that it would be endorsed by Es as a valid hypothesis about human behavior and (b) select one of the seven which they believed was likely to be the most valid.

Analysis of the experimental Ss' hypothesis choices revealed that 11 of the 22 (50%, $p < .00005$) selected "favorability of self-descriptions is positively related to favorability of significant events." Analysis of variance of responses on the 100 point probability scale revealed a significant main effect for hypotheses ($F = 6.96$, $df = 6/126$, $p < .01$). However, posttests revealed no differences among the hypotheses in likelihood that they were of interest to Allen and Potkay. Analysis of control Ss' choices of the "one most valid" hypothesis indicated that 13 of 25 (52%, $p < .00008$) picked "favorability of self-descriptions is related to favorability of significant events", and analysis of the 100 point probability scale responses yielded a main effect for hypotheses ($F = 20.59$, $df = 6/144$, $p < .001$). Posttests revealed that the main effect for the most part was due to greater perceived validity attributed to the Allen-Potkay hypothesis than to other hypotheses.

The present results do not support the assertion that "demand character" might have accounted for the results of Allen and Potkay. Whether or not Ss had seen the instructions given to the original Allen-Potkay Ss, they selected Allen and Potkay's hypothesis. Further, they made this choice more strongly when asked to select the most valid hypothesis than when asked to select the hypothesis of interest to Allen and Potkay. It seems that when the present Ss selected Allen and Potkay's hypothesis, they were responding to the apparent validity of that hypothesis.⁴

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⁴ Allen, B. P., & Potkay, C. R. Misunderstanding the Adjective Generation Technique (AGT): Comments on Bem's rejoinder. *J. Personal.*, 1977, 45, 334-342.

ANGER AND THE BODY-BUFFER ZONE*

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EDGAR C. O'NEAL,¹ MARK A. BRUNAULT, JAMES F. MARQUIS, AND
MICHAEL CARIFIO

In several recent studies, male prisoners convicted of violent crimes have expressed preferences for greater interpersonal distance between themselves and a male experimental assistant than did prisoners whose records did not include violent crimes.² While violent criminals' "body buffer zones" were significantly larger than those of the others, the difference was of a larger magnitude for the area behind the Ss than for the area in front of them. The present study attempted to clarify this relationship between aggressivity and personal space preference by using Ss who had no criminal records and experimentally manipulating violence-proneness via anger-induction procedure.

Thirty-two male volunteers from undergraduate psychology courses were randomly assigned to either an angered or not-angered treatment condition in an experiment described to them as a study of "attitudinal learning." Ss in the angered condition overheard an insulting evaluation of them by a confederate, made in response to E's interview questions; in previous studies³ this procedure reliably evoked aggression. Ss exposed to the insult subsequently rated themselves as higher [$F(1,26) = 17.37, p < .01$] in anger than did Ss who overheard the accomplice describe them in more favorable terms. Finally in a test of each S's personal space preference, after asking the S to indicate at what point his proximity caused discomfort, the E approached him six inches at a time, each time after advancing he said, "Now?" The E's approach was along six axes, in a random order for each S, and a mark was made on the floor each time the S's response was

* Received in the Editorial Office, Provincetown, Massachusetts, on March 27, 1978. Copyright, 1979, by The Journal Press.

¹ Requests for reprints should be sent to the first author at the address shown at the end of this article.

² Kinzel, A. F. Body-buffer zone in violent prisoners. *Amer J Psychiat*, 1970, 127, 59-64. Hildreth, A. M., Derogatis, L. R., & McClusker, K. Body-buffer zone and violence: A reassessment and confirmation. *Amer J Psychiat*, 1971, 127, 1641-1645. Roger, D. B., & Schalekamp, E. E. Body-buffer zone and violence: A cross-cultural study. *J Soc Psychol*, 1976, 98, 153-158.

³ E.g., Larwood, L., O'Neal, E., & Brennan, P. Increasing the physical aggressiveness of women. *J. Soc. Psychol.*, 1977, 101, 97-101.

affirmative. A procedure described by Kinzel⁴ was used to calculate body-buffer area.

As expected, the total body-buffer area was larger [$F(1,26) = 8.27, p < .01$] for angered than for nonangered Ss. However, contrary to findings in studies employing prisoners as Ss, the difference was much greater for the area in front of Ss: the front half of the body-buffer zone for the angered Ss was significantly [$F(1,26) = 424.33, p < .01$] larger than that for the other Ss, while for the back half of the zone the angered/nonangered difference was not significant [$F(1,26) = 1.49$].

The results indicate strongly that for the population being investigated, when angered, these males preferred greater interpersonal distances between themselves and another male. It is tempting to conclude that for the violent criminal larger rear buffer zone may be due to a defensive spatial orientation (to make less probable attacks from the rear); whereas for males without a background of criminal violence and criminal institutionalization, anger produces an effect chiefly upon the frontal area, a modification that may represent reduced social approachability.

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⁴ Kinzel, A. F. Body-buffer zone in violent prisoners. *Amer. J. Psychiat.*, 1970, 127, 59-64.

CURRENT PROBLEMS AND RESOLUTIONS

Under this heading appear summaries of data which, in 500 words or less, would increase our comprehension of socially compelling problems, hopefully move us somewhat closer to a solution, and clearly show promise of transcending their own origin in the Zeitgeist, additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, 106, 137-138.

RELIGIOSITY AND ANXIETY*

Middle Tennessee State University

ROBERT S. STURGEON AND ROY W. HAMLEY

Few investigations have attempted to determine whether being a Christian would result in less personal anxiety or not. One problem with research on religiosity is that results have not been clear-cut. Allport has indicated that religiosity might not result in a homogeneous grouping. He developed a religious orientation scale and determined the existence of at least two orientation groups within a religious sample: intrinsic and extrinsic.¹ Using Allport's measure, Wilson found that intrinsically oriented Christians were more religious and less anxious on trait and existential anxiety measures than extrinsically oriented Christians.² The present study contends that Christians of both sexes who are highly religious make up a heterogeneous group which can be separated into intrinsic and extrinsic orientations, with the intrinsic group presumably internalizing their religious beliefs resulting in less anxiety and greater internal locus of control.

One hundred and forty-eight students almost equally represented by sex from a conservative, Protestant Church related college were simultaneously given an Existential Anxiety Scale, Spielberger's Trait and State Anxiety Inventories, An Inventory of Religious Belief, The Religious Orientation

* Received in the Editorial Office, Provincetown, Massachusetts, on January 25, 1978. Copyright, 1979, by The Journal Press.

¹ Allport, G. W., & Ross, J. M. Personal religious orientation and prejudice. *J. Personal & Soc. Psychol.*, 1967, 5, 432-443.

² Wilson, P. F. Religious orientation and anxiety. Unpublished Master's thesis, Middle Tennessee State University, Murfreesboro, 1976.

Scale, and Rotter's Internal-External Locus of Control Scale.³ Four students were excluded because of low scores on the Inventory of Religious Belief, leaving 144 persons who were divided into an Intrinsic and an Extrinsic group which consisted of the top 20 (Intrinsic) and the lower 20 (Extrinsic) persons.

A *t* test of the difference between the means for each of the above self-report measures revealed that the Intrinsic group was significantly less anxious existentially [$t(38) = 3.60, p < .005$], had less trait anxiety [$t(38) = 2.412, p < .025$], and had greater internal locus of control [$t(38) = 3.801, p < .005$] than did the Extrinsic group. The two groups did not differ in state anxiety.

The findings are consistent with Wilson's study of Christian men where a similar procedure was used, thus extending the results to a different religious group and including female college students. No difference in state anxiety would be expected, since no stress condition was present. In summary, at least two groups within a religious belief system were identified and were shown to be different in amounts of anxiety and in locus of control. These results indicate a better state of adjustment for the Intrinsic believers over the Extrinsic believers and are consistent with the notion that the Christian who lives his belief should be more secure, more self-sufficient, and less anxious.

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³ Good, L. R., & Good, K. C. A preliminary measure of existential anxiety. *Psychol. Rep.*, 1974, 34, 72-74. Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. The State-Trait Anxiety Inventory Manual. Palo Alto, Calif.: Consult. Psychol. Press, 1970; Brown, D. G., & Lowe, W. L. Religious beliefs and personality characteristics of college students. *J. Soc. Psychol.*, 1951, 33, 103-129. Allport, G. W., & Ross, J. M. Personal religious orientation and prejudice. *J. Personal & Soc. Psychol.*, 1967, 5, 432-443; Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychol. Monog.*, 1966, 80(1), Whole No. 609.

MATERIAL GOOD NEED FULFILLMENT AS A CORRELATE OF SELF-ESTEEM*

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Material goods found in the American society often serve the critical function of being symbolic extensions of the real self. These extensions typically comprise the subjective yardstick by which society in general initially measures the social acceptability and success level of its members. Similarly, many individuals employ material goods to represent concretely their perceived worth and uniqueness. In this context, it seems feasible that discrepancies may exist between the items individuals would like to have representing themselves and the items they actually possess. Since material goods tend to function as expedient presentations of self-worth, unfulfilled materialistic desiderata should result in reduced levels of self-esteem, just as the self experiences a loss of self-esteem when discrepancies exist between the real self and the ideal self.

With the use of James¹ conceptual model of self-esteem (SE = Successes/Expectations), a general material good need fulfillment model apropos of self-esteem was extracted (SE = material goods possessed/material goods needed). This general model serves as the basis for the specific hypothesis which states that there exists a significant positive correlation ($p < .05$) between self-esteem and the corresponding material good need fulfillment ratio.

Fifty-six female and 40 male racially mixed college students were randomly selected to comprise the sample (total $n = 96$). Each *S* completed a material goods questionnaire concerning 19 material good items common to the American experience, such as a car, TV, and iron. For every item listed on the questionnaire the respondent was asked YES/NO questions relating to (a) item need, (b) item ownership, (c) item satisfaction.

Material good need fulfillment (i. e., the ratio of material goods possessed and satisfied with to material goods needed) sample values were correlated

* Received in the Editorial Office, Provincetown, Massachusetts, on February 14, 1978. Copyright, 1979, by The Journal Press.

¹ James, W. *Psychology*. New York: Holt, 1892. P. 187

with Total *P* scores on the Tennessee Self-Concept Scale (TSCS), a self-report scale utilized to assess levels of self-esteem.

The results indicated a significant positive product-moment correlation existing between material good need fulfillment values and TSCS scores for both the male and female samples, as well as for the total sample population ($r = .4541, .3689$, and $.4133$, respectively; all significant beyond the $.01$ level). Importantly, income and the magnitude of possessions failed to correlate significantly with TSCS scores ($p > .05$).

Although causality cannot be assumed, these findings support the hypothesis that the smaller the discrepancy between the perceived material good needs of an individual and the material goods actually possessed, the higher the level of self-esteem tends to be, irrespective of personal enfranchisement or income.

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Abstracts	<i>Abst.</i>	Journal	<i>J</i>
American	<i>Amer</i>	Mathematical	<i>Math</i>
Anatomy	<i>Anat</i>	Measurement	<i>Meas</i>
Animal	<i>Anim.</i>	Medical	<i>Med</i>
Applied	<i>Appl.</i>	Mental	<i>Ment</i>
Archives	<i>Arch.</i>	Monographs	<i>Monog</i>
Association	<i>Assoc.</i>	Neurology	<i>Neurol</i>
Attitude	<i>Attit.</i>	Opinion	<i>Opin</i>
Australian	<i>Aust</i>	Orthopsychiatry	<i>Orthopsychiat.</i>
Behavior	<i>Behav</i>	Personality	<i>Personal.</i>
British	<i>Brit</i>	Personnel	<i>Person.</i>
Bulletin	<i>Bull.</i>	Philosophy	<i>Philos.</i>
Bureau	<i>Bur</i>	Physics	<i>Phys.</i>
Canadian	<i>Can</i>	Physiology	<i>Physiol.</i>
Character	<i>Charac.</i>	Proceedings	<i>Proc.</i>
Children	<i>Child.</i>	Psychiatry	<i>Psychiat</i>
Chinese	<i>Chin.</i>	Psychoanalysis	<i>Psychoanal</i>
Clinical	<i>Clin.</i>	Psychology	<i>Psychol.</i>
College	<i>Coll.</i>	Psychosomatic	<i>Psychosomat.</i>
Comparative	<i>Comp.</i>	Quarterly	<i>Quart</i>
Consulting	<i>Consult</i>	Religious	<i>Relig</i>
Contributions	<i>Contrib</i>	Research	<i>Res.</i>
Development	<i>Devel.</i>	Review	<i>Rev.</i>
Educational	<i>Educ</i>	School	<i>Sch.</i>
Experimental	<i>Exper.</i>	Science	<i>Sci</i>
General	<i>Gen.</i>	Social	<i>Soc.</i>
Genetic	<i>Genet.</i>	Statistics	<i>Stat.</i>
Indian	<i>Ind.</i>	Studies	<i>Stud.</i>
Industrial	<i>Indus.</i>	Teacher	<i>Teach</i>
International	<i>Internat.</i>	University	<i>Univ.</i>
Italian	<i>Ital.</i>		

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ACADEMIC EXPECTATIONS AND STEREOTYPING IN MEXICAN-AMERICAN AND ANGLO-AMERICAN STUDENTS*¹

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JAMES L. COOPER AND KATHRYN STEEN BROOKS

SUMMARY

Accuracy of expectation was studied as a function of Ss' ethnic background (Mexican-American *vs.* Anglo-American) and type of expectancy statement (for oneself *vs.* for another). A perceptual task was given to 30 Mexican-American and 36 Anglo-American seventh grade boys and girls with feedback manipulated so that each S averaged five of 10 correct. Each S then made a self-expectancy statement and was shown the worked answer sheet of an "other" (fictitious) student who was of similar or dissimilar ethnic origin and asked to state an expectancy for this other student. Statistical analyses revealed a marginally significant difference in self Signed Goal Discrepancy ($p < .10$), indicating that Anglo-Americans were somewhat more accurate in stating self-expectations than Mexican-Americans. Accuracy of expectation was no greater for "other-" than self-expectations ($t < 1.0$), contrary to predictions. Analysis of other Signed Goal Discrepancy for students of similar or dissimilar ethnic background was nonsignificant.

A. INTRODUCTION

Expectancy is an important construct in a variety of contemporary psychological theories, including Rotter's social learning model (11) and Atkinson's achievement motivation theory (1). However, relatively little rigorous research has been conducted concerning the academic expectations of minorities, especially the Mexican-American (MA). The poor performance of MAs in school and other achievement-oriented settings is well

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¹ A portion of this research was presented at the 1977 meeting of the American Educational Research Association in New York, New York.

documented (5, 6, 8). Atkinson (1) indicates that people low in need achievement are characterized by a tendency to state unrealistically low or high expectations, whereas high need achievers tend to state moderately high but realistic expectations. The purpose of the present research was to compare the accuracy or realism of expectation among Mexican-American and Anglo-American (AA) students. Two procedures were used to accomplish this end. The first procedure involved a comparison of the self-expectations of MA and AA students. Versteeg and Hall (13) found that both MA and AA five-year-olds tended to overestimate relative to past performance but that MAs were more accurate. Others have found that MAs tend to underestimate relative to AAs (3), whereas still others have found no significant difference in comparing the two groups (2).

Methodological flaws characterize most studies in this area. Small sample size was the major problem in several studies, with as few as seven Ss in each ethnic group in one study (13). Failure to control for SES differences between ethnic groups characterized some of the research, a problem compounded by the fact that *occupational* aspiration was the dependent measure in the majority of such studies. Prior performance on the task or experience used as the basis for stating expectations was controlled between AA and MA groups in none of the studies found. Thus, ethnicity was confounded with task competence. In the present study, the accuracy of self-expectation for MAs and AAs was compared with the use of moderately large sample groups equated on SES and with the use of a task in which all Ss performed at the same level. The poor quality and the contradictory findings of the previous research precluded a clear prediction for self expectation between MAs and AAs in the present work.

In addition to the *self*-expectancy procedure just outlined one may assess the expectancies of MA and AA Ss for *another person's* performance. Ethnicity is a status variate which does not allow for random assignment or causal conclusions. However, it is possible to assign randomly one half of a group of MA's to the task of stating an expectation for the performance of another S who is MA (or AA) and give a similar procedure to the AA students. Simmons (12, p. 289) indicates that ". . . the Anglo-American's principal assumptions and expectations emphasize the Mexican's presumed inferiority," whereas Mexican-Americans have ". . . a tendency to concede the superiority of Anglo-American ways and consequently to define Mexican ways as undesirable, inferior, and disreputable." If such stereotypes are actually held by MAs and AAs, then one might predict that both groups would tend to state higher expectancies for other people who are

AA as opposed to MA, even when the two groups of others demonstrate equal competence on a given task. It was predicted that both MA and AA Ss would tend to state expectancies for AA others that were higher than prior performance warranted and that both groups of Ss would tend to underestimate the future performance of other MAs relative to prior performance.

The third question examined in the present research concerned the relative accuracy of expectation for one's own performance *vs* the performance of another regardless of ethnicity. McGehee (9) tested male college students on a dart toss game in which 13 pairs of Ss alternated throwing darts where both Ss stated an expectancy on each toss. He found that 61.5% of the students were more accurate in stating predictions concerning their partner's as opposed to their own predictions. Cooper (4) assessed self-other differences in accuracy of expectation on a perceptual task using 60 Ss at each of three grade levels—first, third, and fifth. He observed a grade \times self-other interaction with no self-other differences at the first and third grade and significantly more accuracy in the other judgment at the fifth-grade level. He predicted that such differences would increase with age. It was predicted, therefore, that the seventh graders in the present research would be significantly more accurate in stating expectations for others relative to self predictions.

B. METHOD

1. Subjects

Seventy, seventh-grade boys and girls from an elementary school in suburban Los Angeles were tested. Approximately half of the students in the school were MA and half were AA. The MA and AA groups used in the study were low SES. A *t* test on the Duncan SES levels of the two groups yielded a $t < 1.0$.

2. Procedure

All Ss were given a "self" task booklet in which they were required to assess which of three irregularly shaped lines was longest. Feedback was so manipulated that every S averaged five of 10 correct over each of the four trial-pages of the self-booklets. At the beginning of the fifth trial-page, all Ss were asked to state the number of problems they expected to answer correctly. The workbooks were then taken from the Ss, and each S was given a similar workbook allegedly used by another (fictitious) student. For half of the MAs and half of the AAs, the name and identification of ethnic

origin was "Mexican-American" (e.g., R. Perez, with a check in the box identifying this *S* as a Mexican-American). For the other half of each group, the fictitious students were identified and assigned names that were "Anglo-American" (e.g., J. Cooper, with a check in the space identifying this *S* as an Anglo-American). Each *S* inspected his or her booklet including the cover sheet and the four worked trial-pages. Again, the trial-pages always averaged five of 10 correct for each booklet. The *S* was asked to predict how many correct this other student would have received if he or she had worked the fifth trial-page. The "other" booklets were then collected.

Signed Goal Discrepancy (SGD), the difference between the average feedback and the stated expectancy for page 5, was the primary dependent measure for both self- and other-judgments. If the prediction was higher than the prior feedback, a positive discrepancy was recorded. If *Ss* underestimated relative to prior feedback, they received a negative score.

C. RESULTS²

The mean self SGD for the MA group was +1.166 ($SD = .458$), whereas the AA group mean was +.694 ($SD = 1.326$). A comparison of the MA *vs.* AA self SGD yielded a marginally significant ($p < .10$) *t* score (two tailed). Interpretation of these data is complicated by heterogeneity of variance, although Landquist (7) indicates that "marked heterogeneity of variance" has a small effect in assessing this critical value.

The SGD for others of similar or dissimilar ethnic background was assessed in a 2×2 ANOVA with *Ss* (MA *vs.* AA) and Others (MA *vs.* AA) as factors and the other SGD as the dependent variable. Contrary to predictions, all effects were nonsignificant, indicating that the Mexican-American students did not have higher expectations for other students who were Anglos relative to others who were Mexican-American, with the same results obtaining for the Anglo *Ss* tested.

The self-other difference was assessed by comparing all *S's* self-judgments with their other judgments, collapsing across ethnicity. The *t* value was less than 1.0, indicating that *Ss* were no more accurate in predicting another's performance relative to his or her own performance. All groups in all analyses overestimated somewhat relative to prior performance.

² Additional data may be obtained from the senior author.

D. DISCUSSION

To the extent that marginally significant differences are interpretable, the self SGD data are not consistent with Versteeg and Hall's (13) admittedly tentative findings. Since their study had several methodological flaws and the present data are only marginally significant, it is clear that further research is required to delineate the strength of the relationship between self-expectations and ethnicity in MAs and AAs. It is recommended that more than one expectancy judgment be obtained from each S to increase the reliability of the criterion measure.

The nonsignificant SGD on the other expectancy judgments for MAs and AAs is not in keeping with Simmons' assertion that AAs and MAs tend to view MAs as inferior to AAs. While it is difficult to interpret a nonsignificant finding, it is interesting to note that when SES and prior performance were equated, there were no differences in the academic expectations of either MA or AA Ss in assessing the probable future performance of other people from similar or dissimilar ethnic origin. Perhaps the fact that the Ss in the present study had a history of living near and attending school with both ethnic groups may have attenuated potential stereotyping for both groups of Ss. A major advantage of the present design is that ethnicity is a randomly assigned variate as regards other expectancy, a control not available to researchers investigating ethnicity differences in self-expectations.

The nonsignificant self-other differences, collapsing across ethnicity, are surprising in light of Cooper's (4) data and prediction. He tended to attribute the nonsignificant self-other differences in first and third graders to their inability to distinguish their own thought processes from others, a characteristic of preoperational thinking (10). The present data cast doubt on Cooper's explanation and underscore the need for future research in this area.

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CULTURAL INFLUENCES ON TRANSITION IN THE DEVELOPMENT OF MORAL REASONING IN NIGERIAN BOYS*

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SUMMARY

In order to test Kohlberg's finding of the universal invariant sequential nature of his six stages of moral development in a cross-cultural context, eight Kohlberg-type moral dilemmas were used for pretesting 210 Hausa Muslim secondary school boys aged 12-14 years. The 193 Ss whose moral reasoning was found at Stages 1, 2, 3, and 4 were assigned to various experimental and control groups at each stage level. Experimental Ss were exposed to different pieces of advice, representing moral reasoning of one (+1) and two (+2) stages above their initial stages. Thirty days after experimental treatment, both experimental and control Ss were posttested on all eight dilemmas. The shifts of experimental groups were compared with those of control groups. Data were not strictly in accord with Kohlberg's hypothesis that his stages of moral development are of invariant sequential nature in all cultures.

A. INTRODUCTION

Kohlberg (8, 11) proposed three levels of the development of moral judgment: preconventional, conventional, and postconventional. Each level is subdivided into two distinctive stages, giving six stages altogether. Kohlberg (9) postulated that his stages develop in an invariant sequential order which is normally followed by each individual. According to Kohlberg (11), transition from lower to higher stages of moral development requires a reorganization of the preceding stages rather than an addition to them; the forward movement is through the stage sequence and there is irreversibility. Moreover, he asserts that his schema of the development of moral reasoning is of universal nature. "It implies that moral development

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is not merely a matter of learning the verbal values or rules of the child's culture but reflects something more universal in development, something that would occur in any culture" (11, p. 58). Kohlberg (12, p. 115) maintains that all individuals in all cultures follow the same sequential order of stages of moral development, though different rates and final points of development can be found because of cultural influences.

In an experimental study, Turiel (20) tested Kohlberg's hypothesis of moral development sequence by exposing the Ss to moral reasoning corresponding to a stage above (+1 treatment), a stage below (-1 treatment), and two stages above (+2 treatment) their own pretested stages. He concluded that the experimental conditions induced changes in the Ss' initial mode of moral thinking, but the +1 treatment was the most effective of the three treatments, with the +2 treatment being the least effective (20, p. 616). Turiel's results led him to believe that Kohlberg's stages are successively advanced and individuals tend to move from one to the next rather than leaping any of the stages.

Employing a different experimental method, Rest, Turiel, and Kohlberg (19) replicated Turiel's findings. They asked their Ss to choose two best and two worst out of six pieces of advice about how the dilemmas should be resolved. The pieces of advice corresponded to a stage above (+1), a stage below (-1), and two stages above (+2) the Ss' own stages. Their results showed that their Ss preferred advice that was either one or two stages above their own to advice a stage below their own stage. The results of another study (18) supported the findings of Turiel (20) and those of Rest, Turiel, and Kohlberg (19). Rest (18) concluded that individuals tend to prefer advice corresponding to above rather than at or below their own stages of moral judgment. The findings reported in some recent studies (5, 6) also tended to substantiate Turiel's conclusions as to transition from one to another stage of moral development. Keasey (7), however, added that same-stage moral reasoning is also preferred to that of -1 stage, but individuals do not tend to show preference for +1 stage moral reasoning over that of same-stage.

The above studies as to invariant sequential order of the development of Kohlberg's stages of moral development have mainly been conducted in Western cultures. No serious attempt has been made to test Kohlberg's contention that his stages advance in an invariant sequential fashion in Asian and African cultures, with special reference to Muslims' ways of life. Recently, Maqsood (15) has, however, compared the patterns of moral development of Nigerian and Pakistani Muslim boys with that of American

one, as reported by Kohlberg (10, p. 184). He found that Nigerian and Pakistani boys significantly differed from American boys in use of Kohlberg's Stage 3. Nigerian (Hausa and Yoruba) and Pakistani (Punjabi) boys of 13 years tended to make lesser use of stage 3. In other studies (13, 14, 15) it was seen that Nigerian Muslim Hausa boys of 12 to 14 years used Stages 1 and 4 more frequently than the other four stages. The findings of these studies (13, 14, 15) lead us to believe that Nigerian Muslim adolescent boys' moral judgment advances from Stage 2 to Stage 4 without necessarily passing through Stage 3. In addition, it can be hypothesized that positive induced shift from individuals' own stages as a result of advice and discussion (1, 20) is not consistent for all Kohlberg's six stages in all cultures. The aim of the present inquiry is, therefore, to see how Nigerian Muslim adolescents at Kohlberg's Stages 1, 2, 3, and 4 generalize experimentally induced effects of advice and discussion corresponding to one and two stages above their initial stages in pretesting, treatment, and posttesting hypothetical moral dilemmas.

B. METHOD

1. Subjects

Ss were 210 12- to 14-year-old Hausa Muslim boys studying in Forms 1 and 2 of three secondary schools for boys in Kano City, Nigeria. The population of the three schools was almost comparable in terms of socio-economic background. Most Ss belonged to middle class homes. It should be mentioned here that secondary education is not compulsory in Nigeria; children from working class homes are not yet represented in the population of secondary school pupils.

2. Design

The initial stage of moral reasoning of each S was first determined by administering three Kohlberg-type moral dilemmas. On the basis of pretesting, Ss were distributed themselves into four groups—Stage 1, 2, 3, and 4—as only a few Ss' responses to the three dilemmas showed moral reasoning corresponding to Stages 5 and 6. Ss in each main group were randomly assigned to two experimental groups and a control group. Each experimental group was exposed to two other Kohlberg-type dilemmas and pieces of advice, corresponding to one of the two treatments (+1 and +2). Both experimental and control groups were posttested on three additional Kohlberg-type dilemmas, as well as on the dilemmas used for pretesting and treatment purposes. The shifts from Ss' initial stages for experimental

groups were compared with those of their respective control groups. In brief, there were three phases in this study. Phase 1 was a pretesting condition. In Phase 2, Ss in experimental groups were given different treatments. Phase 3 was meant for posttesting.

3. *Materials*

Eight of Kohlberg's (8) moral dilemmas were selected for this study. These hypothetical moral situations were modified and translated into Hausa, the mother tongue of the Ss, so that the testing material should suit them. For illustrative purposes, the modified English version of Kohlberg's classical moral situation (Heinz's ailing wife) is as follows:

"A woman was near death from a special kind of disease. There was one medicine that the doctors thought might save her. The medicine was available from one chemist, who was charging 10 times more than the real price of the medicine. The sick woman's husband went to every one he knew to borrow the money, but he could only get half of what the medicine cost. He told the chemist that his wife was dying and asked him to sell it cheaper or let him pay later. But the chemist did not agree. So the husband of the sick woman got desperate and stole the medicine from the chemist's shop."

Since the above dilemma was used for different experimental conditions, five versions of this dilemma, each version having a piece of advice corresponding to one of Kohlberg's five stages (2, 3, 4, 5, and 6) at the end of the dilemma, were printed. Using Kohlberg's (8) aspects I and II (intention and consequences), five pieces of advice were prepared as follows:

Stage 2. The husband did right because his wife was sick and he wanted to save her life. He did not want to steal.

Stage 3. The husband did right because people would have blamed him if he did not save her life.

Stage 4. The husband did right because it is the duty of a husband to save his wife's life. He could pay the chemist later on.

Stage 5. The circumstances forced the husband. It is all right to steal in such circumstances.

Stage 6. Where there is a choice, it is all right to steal to save human life.

Nigerian secondary school pupils are admitted to schools after passing the Common Entrance Examination. It was, therefore, expected that all Ss of this study were above average in general ability. In order to assess the ability of general reasoning, the Raven's Progressive Matrices [RPM (17)] was considered as a suitable instrument as there is some evidence (1, 3, 16)

that the RPM is least affected by cultural values. Ss' raw scores on the RPM were converted into standard scores with a mean of 100 and a SD of 15. The scores on the RPM confirmed that Ss were of above average ability of general reasoning ($\bar{X} = 105.76$, $SD = 3.86$).

4. Procedure

For Phase 1 of the study, the investigator visited the three schools one week prior to testing, and explained the nature of this inquiry to the heads of the institutions. The heads agreed to allow the researcher to conduct testing on the school premises. Two Nigerian Hausa undergraduate students, who were familiar with Kohlberg's work, assisted the researcher in testing and scoring. For pretesting, Ss were seated quite apart from each other in their respective school assembly halls. They were presented with the three dilemmas, with instruction that they were going to read short stories and then to write answers to the questions about them. Before allowing Ss to read the dilemmas, one of the assistants read the dilemmas in both English and Hausa, one at a time. Ss were advised to write their responses in detail (in not less than six sentences) for each of the three dilemmas so that modes of thinking were clear from their written responses. Immediately after completing the pretesting, the RPM was administered in group form.

Responses to the pretesting dilemmas were classified into six categories, corresponding to Kohlberg's six stages of moral development, by the researcher and his assistants independently. In order to increase the reliability of the classification procedure, responses were first classified into three broad categories, corresponding to the three Kohlberg levels of moral development: preconventional, conventional, and postconventional, and then into six stages. There were 12 Ss who did not provide sufficient information in their responses; they were interviewed by the researcher and his assistants and thus their modes of thinking were judged on the basis of their oral responses. The interrater reliability for classification of the responses to the pretest dilemmas ranged between .87 and .91.

On the basis of their responses to the pretesting dilemmas, 26 (12.38%), 56 (26.66%), 19 (9.05%), 92 (43.81%), 11 (5.24%), and six (2.86%) Ss were found at Kohlberg's Stages 1, 2, 3, 4, 5, and 6, respectively.

Since there were only 17 boys in Stages 5 and 6, they were eliminated for further testing. Stage 1 Ss were randomly assigned to Experimental 1 (+1 treatment), Experimental 2 (+2 treatment), and the control group. Similarly, the Ss at their initial Stages 2, 3, and 4 were randomly assigned to

two experimental groups (+1 and +2 treatment) and control groups. Two days after first testing, eight experimental groups were seated in different classrooms. The experimental groups were presented with different versions of the Treatment Dilemma 1 (TD1) for reading and then discussion among the members of their groups. For instance, Stage 1 Ss were asked to read the TD1 plus advice (a) for +1 treatment and the TD1 plus advice (b) for +2 treatment three times before they held discussion among the members of their groups for 30 minutes. Experimental Ss were allowed neither to bring any paper or writing material to nor to take any paper from the discussion room. Ten days after experimental Ss had been exposed to the TD1, they were exposed to different versions of the Treatment Dilemma 2 (TD2) in the same way. Twenty days after the completion of Phase 2, all 193 Ss (experimental and control) were brought back to the halls of their schools for Phase 3 and they were presented with eight dilemmas (three pretesting, two treatment, and three posttesting Kohlberg-type hypothetical moral situations). One of the assistants read aloud the dilemmas in both English and Hausa, and then Ss were asked to read them and to answer the questions given at the end of each dilemma. Ss were again advised to answer the questions in detail.

Moral responses to the eight dilemmas were classified into six categories as in the pretesting. There were 11 Ss who did not provide enough information in their responses; they were interviewed and their oral responses were considered for classification. The interrater reliability for classification of posttesting moral responses ranged between .84 to .89.

C. RESULTS

The shifts, in terms of frequencies, from Ss' initial Stages (1, 2, 3, and 4), generalized as a result of the experimental treatments (+1 and +2), were compared with those of control conditions by computing the values of z . The comparisons were made at each stage level, and the values of z , with two decimal points, are given in parentheses in the ensuing paragraphs of this section. The values of z were found significant either at the .01 or the .001 level except where otherwise indicated.

For Stage 1 Ss, one stage above (+1) treatment induced significant shifts in moral responses to the pretest (3.93), treatment (3.20), and posttest (2.21, $p < .05$), whereas two stages above (+2) treatment produced significant shifts in moral responses to only two treatment dilemmas (2.04, $p < .05$).

As to Stage 2 Ss, +2 treatment induced significant shifts in moral responses to pretest (7.98), treatment (4.98), and posttest dilemmas (4.42),

while +1 treatment produced significant shifts in moral responses to only two dilemmas used for treatment purposes (4-16).

Both +1 and +2 treatments yielded significant shifts in moral responses to pretest (3.71 for +1 and 2.32, $p < .05$ for +2), treatment (3.18 for +1 and 3.34 for +2), and posttest dilemmas (2.48, $p < .02$ for +1 and 3.70 for +2) for Stage 3 Ss.

Significant shifts were found, as a result of +1 and +2 treatments, in moral responses to pretest (9.17 for +1 and 4.42 for +2), treatment (6.77 for +1 and 5.55 for +2), and posttest dilemmas (6.35 for +1 and 2.91 for +2) for Stage 4 Ss.

D. DISCUSSION

Three main findings emerged from the data of this study: (a) in the process of moral development, Nigerian Muslim Hausa adolescents tended to use Kohlberg's Stage 4 more and Stage 3 less frequently than Stage 2, (b) pieces of advice corresponding to one stage above (+1) Ss' own stages were more conveniently generalized by the Ss at Stages 1, 3, and 4, and (c) pieces of advice corresponding to two stages above (+2) were also easily generalized by the Ss at Stages 2, 3, and 4.

The first finding tends to substantiate the results of another study (15) conducted with Hausa, Yoruba, and Punjabi (Pakistani) Muslim adolescents. Maqsd (13, 15) found that his Ss made comparatively more use of moral reasoning of Stage 4. The greater use of Stage 4 by the Ss of this study (Hausa Muslim adolescents) is perhaps prevalent in the Muslim Society of Northern Nigeria.

Like other Muslims, Nigerian Muslims' ways of life are greatly influenced by duties, obligations, and rights dictated in the Koran (14). Nigerian Muslim parents demand that their children should study the Koran and then adhere to the duties demanded in their religious book. These duties and rights are more readily accepted with respect. The emphasis on study of Islamic values may lead Muslim children to develop a duty-bound moral reasoning (Stage 4).

The point that Ss generally made little use of Stage 3 and +1 treatment did not yield significant shifts for the Stage 2 Ss indicated a leapfrog from Stage 2 to Stage 4. It seems a bit incredible to comprehend the concept of "duty" without first understanding the concept of "blame." The definite reason, in terms of a deep theoretical framework, for the transition from instrumental moral reasoning to obligatory moral thinking (skipping Stage 3 moral reasoning) is yet to be found. However, two hypotheses may

explain the point: (a) moral judgment fails to follow an invariant sequence in some cultures, and (b) the concept of duty is ingrained in Nigerian Hausa Muslim Society. This researcher's close observation led him to believe that Nigerian Muslim people do not tend to engage in good or bad actions because of praise or blame from others. Virtues and vices are in fact judged in the light of obedience to or regression from the commands given in the Koran. In addition, some authors (4, 21) suggest that Nigerian children are subjected to strict physical discipline so much that they become less concerned with the good-boy oriented moral reasoning (Stage 3).

Results of this inquiry generally showed that pieces of advice corresponding to one stage above *Ss*' own stages were more readily generalized in posttesting hypothetical moral situations. These data lend support to the findings of some other researchers (2, 6, 18, 19, 20). According to Kohlberg, children prefer +1 stage to their own or to all lower stages because this preference represents a better equilibrium and +1 stage is more differentiated and integrated than a lower stage.

The third finding of this study is inconsistent with Turiel's (20) findings concerning his +2 stage experimental treatment and it does not seem to be in accord with Kohlberg's (11) explanation that moral reasoning of one stage above individual's own stage is more differentiated and integrated than a lower stage. We found that +2 treatment produced significant shifts for the *Ss* at Stages 2, 3, and 4. These observations indicated that not only advice corresponding to one stage above but also advice representing two stages above the initial stages can conveniently be generalized.

The data of this inquiry lead us to believe that Kohlberg's claim that his stages of the development of moral reasoning are of an invariant sequential nature is being overgeneralized on the basis of his own and his associates' research in America and other countries with strong Western cultural orientations. Religious values and cultural expectations, which play a vital role in socialization, were ignored to some extent. In view of the results of this study, it is suggested that Kohlberg's schema of invariant sequential stages needs to be further tested in non-Western societies.

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THE EFFECT OF MEANINGFULNESS ON SHORT- AND LONG-TERM RECALL AMONG ETHIOPIANS*

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SUMMARY

The present study seeks to demonstrate, in a non-Western (Ethiopian) cultural setting, the hypothesis that greater meaningfulness of verbal material results in better recall under conditions of short- and long-term memory. Verbal material of three different levels of meaningfulness was presented to 31 senior boys of an Ethiopian secondary school. The least meaningful material was made up of words taken from Zulu, Hausa, and Chinese languages, while the intermediate and high meaningful material consisted of Geez and Amharic words, languages prevalent in Ethiopia. The Ss performed significantly better in high than in intermediate or low, and in intermediate than in low meaningfulness condition. Thus the results confirmed the hypothesis and validated it cross-culturally.

A. INTRODUCTION

Early investigators on the learning phenomenon, such as Ebbinghaus (4), observed differences in retention between meaningful and relatively meaningless verbal material. More recently, a number of researchers including Ellis, Parente, and Shumate (5) reported findings in which greater meaningfulness of learning material resulted in a faster rate of learning. However, while some investigators like Borkowski and Eisner (1) have qualified this conclusion on the basis of their findings, others like Travers (12) had gone so far as to question its validity on theoretical grounds.

Although a comprehensive survey of the literature indicates that the evidence favors meaningfulness as a significant variable in learning, there is obviously some disagreement on the issue. All studies, moreover, have been conducted in the Western world. The present study therefore seeks to examine in a non-Western (Ethiopian) culture setting the relationship be-

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tween meaningfulness of verbal material and recall. The hypothesis to be tested states that greater meaningfulness of verbal material results in better recall under conditions of both Short-Term Memory and Long-Term Memory.

B. METHOD

The Ss were 31 male students in Grade 12 class of an Ethiopian Secondary School. They ranged between 18 and 21 years in age with a mean of 18.5 years. They were asked to learn verbal material at high, intermediate, and low levels of meaningfulness. In the high meaningfulness condition a list of 10 common Amharic words were used as the learning task, while 10 simple Geez words that are somewhat related to the corresponding Amharic words were similarly used in the list for the condition of intermediate meaningfulness. Ten words taken from Zulu, Hausa, and Chinese languages were used as the list in the low meaningfulness condition. Inspection was enough to ensure that these latter words are meaningless not only in Amharic but also in the other major Ethiopian languages, as well as in each S's language as registered in the school records. Amharic is the nation's official language spoken fluently by all Ss, while Geez is the liturgical language of the Ethiopian church. All the words used in the study were words of triple consonant-vowel or CVCVCV format. The items in each list were presented to the Ss serially.

Accepting a false hypothesis was assumed to be a greater risk than failing to confirm a valid one in a study of this nature. The lists, consequently, were presented in the order of high, intermediate, and low levels of meaningfulness to reduce further the probability of type B error (claiming a significant difference between the parameters when no such difference exists) at the cost of simultaneously raising the probability of type A error (claiming insignificance when a real difference exists between the parameters). Any practice effect from the first list, therefore, would enhance the learning of the other two lists. In addition with Ss unaccustomed to psychological testing it seemed necessary to present the meaningful list first in order to increase their confidence that they could succeed in carrying out the task.

At the beginning of the experiment, Ss were told that they would be presented orally with three different lists of words. Each list would be presented three times. Immediately after the third presentation of each list, they would be required to write down as many words as they could recall in any order they wish. The list under condition of high meaningfulness

was first read out to the class loudly by one of the assistants at the rate of one word every three seconds timed by a stopwatch. It was similarly repeated twice. Immediately after the third presentation, Ss were given 10 minutes to write down the words they could recall in any order they liked on a sheet of paper provided for this purpose.

They were given a rest period of five minutes. Afterwards, they were similarly presented with and tested on the list having intermediate meaningfulness. The same process of presentation and testing was repeated for the condition of low meaningfulness at the end of another five minutes rest interval.

After 24 hours and without any prior announcement the Ss were requested to list in any order as many words as they could remember from the three experimental conditions.

C. RESULTS

Mean recall scores for the various experimental conditions were as follows: Short-Term Memory means were 7.1, 4.5, and 2.0 for high, intermediate, and low meaningfulness, respectively. Long-Term Memory means were 3.8, 2.0, and .5 for high, intermediate, and low meaningfulness, respectively. An analysis of variance indicates that meaningfulness and time effects were highly significant. In the case of both treatment effects the differences were significant ($F = 179.88$, $p < .0005$, $F = 105.24$, $p < .0005$).

Following the significant analysis of variance, a *post-hoc* analysis by Scheffé's method was carried out to test for the significance of differences between the means. The *post-hoc* comparisons showed that all three comparisons in each of the two rows and the pair comparison in each of the three columns were significant beyond the .001 level.

D. DISCUSSION

The results not only confirmed the hypothesized positive relationship between meaningfulness and recall but they also provided a cross-cultural validation of the view that greater meaningfulness is associated with better recall under both short- and long-term recall conditions. On the whole, they are in general agreement with the earlier findings based on Western Ss. Although the various levels of meaningfulness have been differently determined in the present study, the results closely resemble the findings reported by McGeoch (7), Sauer (11), Guilford (6), Noble (8), Dowling and Braun (3), Sarason (10), Braun and Heymann (2), as well as Underwood

and Schultz (13). They are especially consistent with those reported by investigators such as Peterson, Peterson, and Miller (9) and Ellis, Parente, and Shumate (5) who employed different levels of meaningfulness based upon the association value of nonsense syllables. Consequently, the present replication in a non-Western society increases confidence in the generalizability of this learning principle.

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EFFECT OF STARING ON NORMAL AND OVERWEIGHT STUDENTS*

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SUMMARY

Twenty-eight university students (14 normal weight, 14 overweight) were "stared" at by a statue of a female human head in eating and noneating conditions for a maximum of 15 minutes. An equal number of normal and overweight Ss served as controls. The results showed that being stared at by a statue produced flight behavior. Both normal and overweight Ss departed sooner in the eating than the studying condition. Overweight Ss departed significantly sooner than did normal Ss in the eating condition, but not significantly sooner in the noneating condition.

A. INTRODUCTION

Recent research by Schachter and his colleagues (9, 11) has shown that the obese and normal weight individuals are differentially affected by internal and external cues. For normal weight persons the most important cues are internal physiological ones which vary with nutritional states (4, 12). The obese are largely unresponsive to these internal cues, their eating behavior being mainly determined by external or environmental cues, such as time of day (10), the sight and display of food (2), and the taste of food (3). The greater reliance on environmental cues by the obese appears to affect not only their food-related behavior, but also behaviors completely unrelated to eating. They have been found to be more responsive than normal weight persons to many kinds of sensory cues in the environment, including visual (4, 8) and auditory cues (4, 6). Also they have been found more affected than normal persons by social cues. Rodin and Slochower (7) manipulated the behavior of a confederate (nice vs. nasty) and noted a

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greater degree of compliance by obese than normal weight Ss, Pliner, Meyer, and Blankstein (5) reported that in an aversive hospital situation obese children responded more quickly to comforting by a nurse than did children of normal weight; and Younger and Pliner (14) obtained evidence that the obese monitor their expressive behavior to a much greater extent than do normal weight persons in eating and noneating situations.

The present paper is also concerned with responsiveness to environmental cues by normal and overweight persons in eating and noneating situations.

Smith, Sanford, and Goldman (13), found that Ss responded to a "blank stare" with flight behavior. Since the obese appear to be more responsive to external environmental cues than normals, it was hypothesized that the obese would resort to flight behavior more frequently than normals in response to a blank stare. In addition, since eating for the overweight tends to be an area of conflict, flight behavior for obese and normals should occur differentially in eating and noneating situations. Flight behavior in the Smith, Sanford, and Goldman study (13) resulted when the blank stare was carried out by human beings. It was also hypothesized that flight behavior would occur if the blank stare was imposed with the use of a bust of a human head. The current study was designed to test the above hypotheses. The bust employed was that of a female. Smith, Sanford, and Goldman (13) reported that male and female Ss responded equally with flight behavior to a female starrer; thus a female statue would be expected to reduce the variation caused by sex.

B. METHOD

1. *Subjects*

Ss were 28 university students; 14 were judged overweight and 14 as normal. Questions have been raised with regard to the operational definitions used to distinguish the normal weight from the overweight (1). Difficulties are encountered because of frame size and such factors as the proportion of muscle and fat. In the current study the decision was made to classify an S as overweight if he or she exceeded the normal weight by 30 or more pounds. The decision was based upon the observation of the confederate (C). Two male graduate student Cs agreed completely in the categorization of 15 Ss. An equal number of overweight and normal individuals served as control Ss. In the samples of Ss, 26 were female and 30 male, and nine were black and the rest Caucasian.

2. Procedure

A life-size bust of a female human head with life-like eyes and expressionless but natural face and features was used. A stopwatch served in the recording of time.

The noneating condition took place in the university library at least 30 minutes prior to the starting time for classes, assuring that student departure was not a function of class commitment. *Ss* were selected if they were classifiable as either normal or overweight and sat down alone at a table with at least two vacant chairs on each side of them and three vacant chairs on the opposite side. The *C* immediately followed, seated himself across the table and one seat down from the *S*, and casually placed the bust of the human head on the table directly in front of the *S* with the bust "looking" right at the *S*. The *C* unobtrusively started the stopwatch in his coat pocket and appeared to be deeply involved in study. Each *S* was run for 15 minutes or until departure.

The eating condition was carried out in the university cafeteria. The *C* unobtrusively watched for potential *Ss* as they entered the dining room area after buying their meal. The *C* then seated himself and placed the bust as before as soon as possible after the *S* was seated and drank a cup of coffee while studying. *Ss* were selected by the same criterion as in the noneating condition, and again each *S* was run for 15 minutes or until departure.

The control conditions in the library and cafeteria were conducted in exactly the same manner, except that the bust was placed face down on the table.

C. RESULTS

On all the measures employed in this study, no differences were found between male and female scores. Hence, the two sets of scores were combined.

In preliminary observations, it was noted that students rarely left the library study tables before 15 minutes and took a minimum of 15 minutes to complete their meals in the cafeteria. Since the *C* placed the bust on the table immediately after the *Ss* were seated, it was considered that *Ss* engaged in flight behavior if they departed from the table in the library or cafeteria before 15 minutes. Of the 28 *Ss* in the control sample (bust placed face down), two (7%) of the *Ss* departed within the 15 minute interval, one being overweight and one being normal weight. Of the 28 *Ss* in the

experimental sample (bust staring), 18 (64%) of the Ss departed, 10 being overweight, and eight being normal weight [$\chi^2(1) = 19.91, p < .001$].

A 2×2 analysis of variance test was carried out for the mean departure time in minutes when the bust was staring for normal weight and overweight Ss, in the library (noneating) and cafeteria (eating) conditions. The mean departure time ($M = 10.64$) in the cafeteria was significantly shorter than the mean departure time ($M = 14.13$) in the library [$F(1, 24) = 33.57, p < .001$]. The mean departure time ($M = 11.57$) for the overweight Ss was shorter than the mean departure time ($M = 13.19$) for the normal weight Ss [$F(1, 24) = 7.22, p < .02$]. The interaction was not significant.

The mean departure time ($M = 9.39$) in the cafeteria for the overweight Ss was significantly shorter than the mean departure time ($M = 11.88$) for the normal weight Ss in the cafeteria [$t(24) = 2.49, p < .01$]. However, the mean departure time ($M = 13.75$) in the library for the overweight Ss was not significantly shorter than the mean departure time ($M = 14.50$) for the normal weight Ss in the library [$t(24) = .83, p > .40$].

A 2×2 analysis of variance test was carried out for the mean departure times obtained for the four conditions in the control procedure (bust placed face down). All the F s were nonsignificant.

D. DISCUSSION

The study by Smith, Sanford, and Goldman (13) found that a "blank stare" administered by Cs would produce flight behavior. The results obtained in the current study showed that flight behavior could also be induced when a statue (bust) did the staring.

Both normal weight and overweight Ss when stared at by the statue departed sooner in the cafeteria than in the library. Perhaps the bust of a human head was perceived as an art object and more in keeping with norms in a library setting. In a cafeteria a bust might be considered more unusual and more disturbing. Further, in the library an individual studying might have been less involved with the visual environment than an individual who was eating in a cafeteria.

The current study also found that in a noneating situation overweight Ss did not tend to engage in flight behavior to the staring bust more readily than did normal weight Ss. However, in an eating situation the overweight Ss were more responsive to the staring bust and engaged in greater flight behavior than normal weight Ss. Thus the overweight individual appears to have been more responsive to external cues than the normal weight individual in an eating situation, but not in a noneating situation.

What explanation might be offered for this last finding? It would not be considered unusual for overweight persons to have experienced disapproval or even censure from others because of their eating habits. Thus, an overweight person while eating might be experiencing conflict, guilt, and tension, and these feelings might be particularly exacerbated in the presence of others. An obnoxious stimulus, such as a staring bust, would be overly disrupting. Any identification of the staring bust with critical others would also tend to arouse unpleasant emotional connotations and would lead the overweight person to flee the area.

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EFFECTS OF BENEFACTOR AND RECIPIENT STATUS ON HELPING BEHAVIOR*

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SUMMARY

This study assessed the effects of status and status similarity of benefactor and recipient on helping behavior in a naturalistic situation. Thirty Faculty members and 30 graduate students (all males) were high and low status benefactors, respectively. The high and low status roles of recipient were played by a faculty member and a student, in a residential campus setting. Ss were approached either by a faculty recipient or by a student recipient and asked to (a) rate their willingness and feelings about helping and (b) donate money to victims of recent floods. The results indicated that status of both benefactor and recipient determined helping behavior independently, as well as jointly.

A. INTRODUCTION

This study was designed to assess the effects of status and status similarity of benefactors and recipient on helping behavior. The major variables investigated here were status of the benefactor (faculty/graduate students) and status of recipient (faculty/graduate student) who received help for flood victims. Thus, the factorial design also provided manipulation of status similarity of benefactor and recipient. For the purpose of this analysis, helping behavior is defined as the extent to which an individual shows willingness and feelings about helping and donates money to a recipient who is collecting funds for flood victims.

Previous studies have indicated a relationship between status variables and helping behavior (6, 7). These investigators have studied the role of

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¹ The author is thankful to Shrikant Grade for his help in data collection.

² Request for reprints should be sent to the author at the address shown at the end of this article.

achieved and ascribed status in helping behavior. In one study, Midlarsky (5) found a significant relationship between achieved status and helping. In a later study (6) significant relationship of helping was found both with achieved status and ascribed status. It is argued that persons with high achieved status may feel the sense of potency or effectiveness, and subsequently may perceive that they are more capable than others. Furthermore, the perception of self-competence in itself may lead to expectations of lower costs in helping. Midlarsky and Midlarsky (7) have argued that sense of competence and effectiveness may lead such persons to put aside their own concerns for another. The individual with high-ascribed status may be more helpful for similar reasons. The positive role of perceived competence in helping has been demonstrated by other investigators in laboratory settings. For example, it was found (3) that perceived competence increased Ss volunteering to donate blood. In another study (2), Ss who were led to feel competent at a task were more likely to help with a similar task than those who were not led to feel competent.

In the studies referred to above, status and competence factors were experimentally manipulated. There is a lack of evidence to substantiate the above findings from real-world data. The present study was planned to show the effects of status of both benefactor and recipient on helping in a naturalistic setting. In earlier researches recipient's status factor was ignored. In addition, the present study was planned to demonstrate the effects of similarity of benefactor's and recipient's status on helping. As mentioned earlier, faculty and student confederates were not the real recipients; they were fund collectors, on behalf of the National Flood Relief Committee for flood victims. Quite possibly the high status of the recipient might increase the credibility of need and purpose of receiving help in the mind of benefactors.

B. METHOD

1. *Design and Subjects*

The design of the experiment was a 2×2 factorial with two levels of benefactor's status and two levels of recipient's status. The high or low status role of the recipient was provided by a faculty member and a student, respectively. There were 15 Ss in each of the four groups with 30 faculty members and 30 graduate students, a total of 60 Ss.

2. Procedure

Faculty and student Ss were approached individually either by a faculty recipient or by a student recipient. The faculty recipient while approaching Ss introduced himself as a faculty member and told them that he was collecting funds on behalf of the National Flood Relief Committee for victims of recent floods in different parts of the country. The faculty member who played the recipient's role had recently joined the institution where this study was conducted, thus other personal factors possibly did not enter into the experimental setting. Furthermore, he did not approach his own departmental colleagues and students and other persons who might have known him previously. The student recipient introduced himself as a student to Ss and followed the above-mentioned procedures and precautions. After a personal introduction, Ss were requested to complete a small questionnaire which measured their willingness to help and their feelings concerning helping³ on five-point scales, as well as the number of rupees they would contribute to the flood victims.

After completion of the questionnaire, Ss were asked to pay the amount which they had mentioned for contribution. They were encouraged to open their wallets and to count the full amount of money for actual donation. Just before they actually turned the money over, the recipient thanked and debriefed Ss and told them the real purpose of his visit.

C. RESULTS

A separate 2×2 analysis of variance was computed for each of the three dependent measures: i. e., willingness to help, feeling about helping, and amount of donations for flood victims. For all F values reported below, $df = 1, 56$.

1. Willingness to Help

Analysis of variance of Ss' willingness to help indicated significant main effects for benefactor's status factor, $F = 43.00, p < .001$, with more willingness shown by faculty benefactors ($M = 4.53$) than by student benefactors ($M = 3.79$). The recipient's status factor reached a significant level, $F = 104.80, p < .001$, with more willingness shown to a faculty recipient ($M = 4.73$) than to a student recipient ($M = 3.58$). The two-way

³ "Willingness to help" simply means readiness to help. However, while helping, one may not always feel good, and it was to check the "feeling" aspect while helping that the additional item was used.

interaction effect was found to be significant, $F = 41.60$, $p < .001$. It is evident that the significant interaction effect was due primarily to the unwillingness of student benefactors to help flood victims through the student recipient. Faculty and student benefactors did not differ in the faculty recipient condition, but in the student recipient condition faculty benefactors showed more willingness to help than student benefactors.

2. *Feeling About Helping*

The results of analysis of variance of responses on the item measuring feeling in helping indicated significant main effects for benefactor status factor, $F = 14.36$, $p < .01$, with more positive feelings for helping shown by faculty benefactors ($M = 4.26$) than by students ($M = 3.40$). The recipient's status factor reached a significant level, $F = 43.90$, $p < .001$, with more feeling shown to a faculty recipient ($M = 4.53$) than to a student recipient ($M = 3.58$). In addition, the interaction effects reached significance, $F = 8.14$, $p < .01$. Both faculty and student benefactors showed lesser feelings for helping to a student recipient in comparison to a faculty recipient. This discrimination in demonstrated feeling was greater in case of student benefactors than in faculty benefactors.

3. *Amount of Contributions*

An analysis of variance of amount of actual contributions revealed significant main effects for benefactor status factor, $F = 48.3$, $p < .001$, with more rupees donated by faculty benefactors ($M = 4.90$) than student benefactors ($M = 3.19$). The recipient's status factor reached a significant level, $F = 8.69$, $p < .01$, with more rupees donated to a faculty recipient ($M = 6.03$) than to a student recipient ($M = 2.62$). The interaction effect was not significant for this dependent measure, $F = .17$, N.S.

Correlational analyses reflected the magnitude of the relationships between the overt behavioral measure of donating and the two verbal measures of helping (for all mean r s reported below, $p < .01$). These correlations were computed for each cell of the design, and therefore mean product-moment correlation coefficients are reported, as well as the range of correlations within cells, as follows: Amount donated *vs.* willingness to help, $r = .42$ (range = .31 to .48); amount donated *vs.* feeling about helping, $r = .36$ (range = .22 to .44); willingness to help *vs.* feeling about helping, $r = .54$ (range = .46 to .62).

D. DISCUSSION

The results indicate that the status of both benefactor and recipient determined helping behavior. The faculty benefactors who have a relatively higher socioeconomic status, especially on a campus, than student benefactors did show greater willingness and feelings for helping and also readily contributed more money for flood victims. The findings suggest that the status factor of the recipient also played a role in helping. A high status faculty recipient in comparison to a student recipient clearly evoked greater willingness and stronger feelings, and he received larger actual donations. The significant two-way interaction effects further suggest that helping was greatest when both benefactor and recipient were faculty, and it was lowest when both benefactor and recipient were students. Thus the results tend to support the hypotheses.

The findings of the study support earlier experimental results demonstrating the role of benefactor's competence and status (2, 3, 5, 6, 7), even though they were obtained in a different culture. In addition, the findings indicate the role of the recipient's status in helping. It is plausible to argue that the high status recipient perhaps enjoys high credibility, and therefore a request for help from him may be perceived as genuine by benefactors who subsequently help more. The high status benefactors, perhaps because of their high socioeconomic level in a particular social context, are guided by heightened social responsibility norms (1, 4, 10), they perceive themselves as competent and subsequently perceive their reduced cost in helping (2, 3, 8, 9, 11), the latter perception probably motivates them to help more than low status benefactors. This interpretation of the findings seems quite valid for Indian society which is labeled as hierarchy ridden and traditional in nature. Furthermore, the findings suggest that the high status similarity of benefactor and recipient became an additive factor leading to greater help in such a situation. However, the low status similarity of benefactor and recipient influenced helping behavior adversely. These generalizations and interpretations across other cultures, however, require further empirical research outside of India.

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EFFECTS OF PRAISE AND SMALL REQUESTS ON RECEPTIVITY TO DIRECT-MAIL APPEALS*

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SUMMARY

In a field experiment, 229 female household residents were approached by one of four female Red Cross volunteers who delivered a message which included a labeling treatment saying, "I wish more of the people I met were as interested in their fellowman as you appear to be," or a request to wear a small Red Cross lapel pin. Ss were subsequently exposed to up to four direct-mail appeals for the Red Cross, and then behavioral measures were collected by telephone. As predicted, labeled Ss were more responsive to the subsequent mailed appeals than unlabeled Ss, with labeling displaying both a prominent main effect and an interaction with the mailed appeals. The small request, however, evoked an effect opposite from that predicted.

A. INTRODUCTION

Change agents can benefit from the use of a considerable array of behavioral tools accessible in the literature. Most studies deal with these tools one or two at a time, examining the independent effect of each. However, in actual application, such tools are more likely to be used in combination, and the effect of any single tool should be evaluated in the context of other tools used.

For example, a local public health organization may be involved in a participation drive using personal and telephone canvassing, direct-mail promotion, and broadcast public service announcements. Each of the media may benefit from the use of advanced behavioral techniques in conveying the message. When used in combination, however, one can only speculate about the net effect, as literature reviewing such interactions is virtually nonexistent.

This paper presents an investigation of the interaction between two

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commonly used tools—a canvassing strategy utilizing two self-perception manipulations (the “labeling” and “foot-in-the-door” techniques) and subsequent direct-mail charitable appeals.

The idea behind both labeling and foot-in-the-door techniques is straightforward. If people can be induced to believe something new about themselves, then they may start behaving on the basis of that belief. Labeling theorists may label a person as one who possesses a particular belief (e. g., “You are a very charitable person”); foot-in-the-door theories may ask the person to perform a small, but insufficiently justified, act consistent with the particular belief (e. g., displaying a small “Give to Charity” card in their window). In each case it is expected that the person will then begin to view himself as more charitable and to act more consistently with this new attitude. The explanation for such changes is consistent with Bem’s (3, 4) self-perception theory, which asserts that people having weak cues about their disposition will turn to other evidence to infer their attitudes.

A foot-in-the-door study examined a link between compliance with a small request and later verbal intentions to comply with a large request (5). Ss approached for the initial small request (display a small window card) were much more likely than a control group to agree to comply with the subsequent large request (display a large sign in their front yard).

Pliner, Hart, Kohl, and Saari (9) extended the foot-in-the-door link to find that an initial compliance had the expected effect upon actual subsequent behavior. Uranowitz (13) varied the size of an initial monetary inducement and found support for the self-perception expectation that the *smaller* inducement yielded *greater* subsequent yielding. This effect was also observed by Reingen and Kernan (10), who manipulated both the size of initial request and level of incentive for compliance to it.

The size of the initial request seems critical in obtaining the foot-in-the-door effect. One might expect that a *large* initial request for help would lead to large attitude and behavior changes—that people would become “super-helpers.” Yet Aderman and Berkowitz (1) suggested that a too-large initial helping request could result in *less* subsequent helping behavior, with Ss arguing, “I’ve done my good deed for the day by complying with the initial request—I don’t have to do more.” Miller and Suls (8) supported this conjecture by finding that a smaller initial helping request produced more subsequent helping.

Like the foot-in-the-door technique, a labeling manipulation also seems to evoke self-perception results; yet the labeling phenomenon has been

scarcely investigated. In an early study [reported well after the fact in Bem (4)], Bem concluded that being told, "You like brown bread," may have the same effect as hearing oneself say, "I like brown bread." Aronson and Mettee (2) found that randomly assigned "self-esteem feedback" had a predicted effect upon Ss' resistance to cheat in a card game, and Ross, Insko, and Ross (11) found that labeling elicited attitudes generally congruent with the labels. Ss appear to be "self-perceiving"—drawing attitudinal conclusions—on the basis of the label.

In a more recent study directly applicable to change agents, Kraut (6) labeled homemakers as either "charitable" or "uncharitable" prior to a fund-raising solicitation. His data support the self-perception assertion that a "charitable" label would increase subsequent charitable donations, and that donations from the "uncharitable" label group should be smaller than for the no-label control group. Steele (12), using a telephone manipulation, substantiated Kraut's findings for the "charitable" label. Miller, Brickman, and Bolen (7) investigated the effect of a labeling manipulation (e.g., "You really work hard . . .") *versus* a straight persuasive message (e.g., "You should work harder . . .") to find that the labeling treatment was consistently superior to straight persuasion in modifying maintained subsequent behavior.

Although it should be noted that the studies cited may contain cultural bias (having been conducted only among American Ss), both labeling and foot-in-the-door manipulations seem to evoke attitude and subsequent behavior changes as a result of new self-perceptions. This theoretical base also gives reason to expect another result: interactions between the manipulations and subsequent direct-mail appeals. People labeled as "charitable" should begin to act more charitably than people not so labeled, to note and respond more strongly to charitable appeals, and even to direct-mail promotions for charity. This suggests that an interaction effect should occur between a charitable label or small request contact and subsequent mailed charitable appeals. People sensitized to view themselves as more charitable should be more responsive than nonsensitized people to each subsequent direct-mail charitable appeal.

B. METHOD

The design employed is a 20 cell three-way incomplete factorial with predictor variables of direct-mail exposure (either 0, 1, 2, or 4 exposures), labeling (either labeled or unlabeled), and small request (small request or no small request). The final subject pool consisted of 229 adult women,

approached in a probability sample of single family dwellings in residential Palo Alto, California.

The research, in cooperation with a local Red Cross center, used the following procedure. A female *E*, representing herself as a Red Cross volunteer, reached *Ss* at their homes. The volunteer delivered one of several approaches, either a "small request" or a "no small request" recitation, each either with or without a "charitable label." *Ss* in all treatment conditions were then mailed Red Cross promotional material in one of four repetition levels.

About two weeks after the initial contact, *Ss* were then approached by telephone for collection of dependent measures. Males, representing themselves as conducting student research on public health organizations, administered the interviews.

Volunteers reached every third home in four randomly selected neighborhoods. They approached the homes in a manner typical of volunteer social workers, but spoke only with the woman of the house. Once in contact with the *S*, the volunteer recited the message appropriate to the treatment condition assigned for the household. No interviewer discretion was permitted in treatment assignment, and treatment conditions were rotated on a systematic basis both within and between interviewers.

1. *Self-Perception Treatments*

Messages to be presented in each treatment condition had been developed by pretest to achieve maximum attention at the door with minimum refusals. In all conditions the volunteer began as follows:

Small Request Condition: Hello, I'm a volunteer for the Red Cross Blood Center here in Palo Alto. I'm not here to ask for money—just for a minute of your time. March is Red Cross month, and I am part of a program to help increase the neighborhood's consciousness of Red Cross.

The volunteer continued:

You can help. I have these little signs and would like to ask if you would be willing to put one in your front window for a week? (At this point a 4 × 6 inch card, reading, "Give 'til it helps," was handed to *Ss*.) Just one other thing—equally small. The Red Cross is very short on blood of all types, and on volunteers—despite the fact that it's so easy and convenient to give. You know, the Blood Center is less than a mile from here. Again, we want to increase a sense of responsibility about the Red Cross and we've found that every little reminder helps—even something as small as this little pin. Will you wear this pin on just your next shopping trip or two? (*Ss* were then handed a lapel pin resembling a drop of blood.)

The "small requests" themselves are adaptations of those used by Freedman and Fraser (5) and Pliner *et al.* (9). The "no small request" condition was exactly like the small request condition but without requests for the small behavioral compliance.

The Red Cross is very short on blood of all types, and on volunteers, despite the fact that it's so easy and convenient to give. You know, the Blood Center is less than a mile from here. Again, we want to increase a sense of responsibility about the Red Cross, and we've found that every little reminder helps.

Added to each of these treatments was a labeling treatment (similar to that used by Kraut (6) which was also systematically rotated in its presence or absence. The script for the labeling treatment follows:

Label Condition: Thank you for your time in listening about the Red Cross. I wish more of the people I met were as interested in their fellow man as you appear to be. (A printed card was then handed to the Ss. It read: "Those who support the Red Cross generously help a good cause. Thank you for being a Red Cross supporter.")

No Label: Thank you.

Volunteers were instructed to communicate the labeling message sincerely and with direct eye contact.

There was virtually complete compliance with the small initial request, although the few women who refused to comply were retained in the experimental condition to which they had been assigned in order to avoid self-selection bias.

2. Direct-Mail Exposures

The contents of the direct mailings were based on the type and quantity of material which the Red Cross might ordinarily include in such a campaign. Each envelope contained a letter and a pamphlet. Four different letters were prepared, and each of the letters included appeals for blood donors and Red Cross volunteer workers. Four pamphlets and envelope versions were used, with all contents and envelope versions systematically rotated within each treatment condition.

The personal contacts and direct mailings were completed within a two-week period. During a period two days later, all Ss were reached by telephone in order to obtain the dependent measure. The dependent measure was the response to a question which named five social health organizations (including the Red Cross) and then asked:

If you were going to do volunteer work for one of these organizations, which one would be your first choice?

These behavioral intentions were coded as the proportion of Ss rating the Red Cross as first choice.

Tests of the data employed analysis of covariance on cell means, the latter being used in place of raw data to avoid the problem of the heteroscedasticity in proportional data. Essentially, this is a regression procedure which measures differences in intercepts for main effect tests and differences in slopes for interaction tests.

C. Results

Both the small request and the label were expected to have similar effects. Each was hypothesized to have a main effect and an interaction with subsequent direct mail exposure.

The labeling treatment data are plotted in Figure 1 (left panel). The main effect of label over no label is significant, as predicted ($F = 26.305$, 1 and 4 *df*, $p < .007$).

The results also demonstrate the degree to which interaction between the personal contact and direct-mail appeals was affected by the personal contacting strategy, as interaction effects are significant between label and no label conditions ($F = 9.923$, 1 and 4 *df*, $p < .035$). In fact the label did sensitize Ss to be more responsive to the subsequent direct-mail appeals;

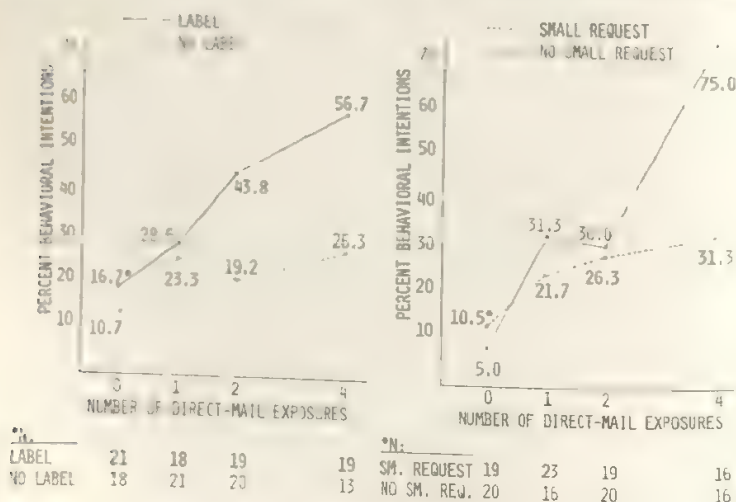


FIGURE 1

MAIN EFFECTS OF LABEL AND SMALL REQUEST CONDITIONS

Left—label vs no label groups; right—small request vs no small request groups.

each subsequent appeal had a greater incremental impact for labeled Ss than for unlabeled Ss.

As with the labeling treatment, both main effects and interactions with small appeals were also anticipated for the small request treatment groups. But a puzzle emerges. As the data plotted in Figure 1 (right panel) show, there is almost a complete reversal of the anticipated effects—the directions of main effects are opposite to those predicted, for responses from the no small request group surpass the responses from the small request group (with $F = 6.688$, 1 and 4 *df*, $p < .061$). The interactions, too, maintain this reversal, for the "no small request" group ($F = 11.875$, 1 and 4 *df*, $p < .026$). Although the small request condition appears more effective than the no small request condition at the zero-exposure level, this effect is not significant ($\chi^2 = .419$, 1 *df*, *n.s.*).

D. DISCUSSION

The present data support the notion that an individual labeled as charitable may begin thinking and acting like a more charitable person. Consequent behavior should follow, as a "charitable person" should be more likely to act upon charitable appeals. Not only can the label have a powerful effect upon behavior, but the effect of the label seemed in the present data to persist. Here the effects of the label were still being exhibited two weeks after the labeling treatment was applied (since measures were collected two weeks after labeling), and presumably persisted well beyond the two-week period.

Ss seem to have been led to argue mentally, "What is the meaning of this label? It must be because I am the kind of person that does this sort of thing." This sensitization appears to have led to higher receptivity to subsequent mailed appeals.

However, in light of earlier research, the finding that a persuasive appeal without a small request is more effective than one with a small request is a troubling phenomenon. By way of explanation, it is possible that the small initial request was not noteworthy. Every effort was made to develop the small request "door approach" to maximize compliance with the requests while still making the request consequential. There is a danger here. It is a simple matter to develop a request which will yield full compliance, but in doing so one may be making the request too trivial, too inconsequential, even to be noted. Every day these Ss are deluged with small requests, but most of these requests probably lack significance in their eyes. The requests do not form a base from which a self-perception will be drawn. Such may have been the case in the present research, but this still does not explain

why the "small request" treatment fared less well than the "no small request" treatment.

Rather than the requests being too small, a more convincing explanation is that they were too large. In fact, there was no true "no small request" condition, as even the act of listening to a Red Cross volunteer constituted compliance with a small request. Beyond this, using two, small request manipulations, each ordinarily effective, may have been too much for the Ss. As reported by Miller and Suls (8) a too-large initial helping request may lead people to feel that they have "done their good deed already"; thus they were less responsive to subsequent charitable appeals. Ss in the no-request treatment condition, not provided with this "good deed" rationale, may have then been more likely to respond to the subsequent appeals.

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TEMPORAL CHANGES IN THE PREDICTION OF GROUP PERFORMANCE¹

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SUMMARY

Dyadic performances on easy and difficult cross-word puzzles were examined for possible temporal changes in the ability-performance relationship. Ss were 144 male undergraduates. Results indicated that there were differences in the point in time at which member ability maximally predicted group performance, with the peak r tending to occur earlier on the difficult task than on the easy task. However, the maximum ability-performance relationship occurred earlier on tasks performed in a relatively favorable task-solving organizational structure. After reaching a peak, the ability-performance relationship declined over time, with this effect being most pronounced on the easy task.

A. INTRODUCTION

Research on the relationship between member ability and team performance has typically examined the group performance measure at a single point in time: the often arbitrarily chosen "end of the task," usually as defined by the *E*. Attempts to draw conclusions about some group characteristics or some independent variable are then made. This procedure fails to take account of the possibility that the effect of an independent variable on the dependent variable may change over time. For example, in examining individual performance it is rather common to find a temporal change in the relationship between ability measures and some performance criterion. This change in the relationship between individual skill assessment and subsequent performance is usually in the form of a decay or decline in the strength of the relationship and has occurred in a variety of settings.

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including the prediction of psychomotor performance, academic performance, and occupational proficiency (1).

A second line of research has suggested that the optimal point in time to assess the effect of an independent variable varies as a function of task difficulty (4, 7, 8). If a task is easy, an ability-performance relationship should be maximized relatively early in the task; whereas, if the task is difficult, then the ability-performance relationship should reach a maximum relatively later in the task. Again, these observations have been made for individuals, usually in learning situations.

This article reports research which examines the temporal decay hypothesis and the time-difficulty interaction hypothesis on small group productivity. In particular, it was expected that on an easy task the correlation between group members' ability and group performance would begin near a maximum and show a general decline over time, while on a difficult task the ability-performance relationship would begin at a rather modest level, increasing over time to a peak and then decreasing again with further time.

B. METHOD

Ss were 144 male undergraduates fulfilling a course requirement. Each S participated for approximately two hours, working on a total of four cross-word puzzles in one of several group or individual conditions. A detailed description of the methodology is presented in Shiflett (6). All Ss participated in a warm-up period during which they filled out two cross-word puzzles. Performance on these puzzles served as the measure of puzzle-solving ability.

Immediately after completing the preliminary puzzles, Ss were randomly paired and assigned to one of the experimental conditions: shared labor dyad; divided labor dyad; control dyad; or individual condition. Once they arrived at a private laboratory room, an *E* gave instructions to the two Ss who then began working on two more puzzles. All Ss worked on an easy and a difficult puzzle, each for 20 minutes. Half received the easy and half the difficult puzzle first. *E* remained in the room with the Ss at all times, observing the progress of the group and recording to the nearest minute the time at which each word was inserted into the puzzle. Word frequencies for each two-minute period were subsequently calculated, thus providing a performance score for each of the 10 two-minute blocks available on each task.

Each of the puzzles contained 48 four-letter words in a symmetrical skeleton design. No words were repeated within or across puzzles. Mis-

spelled words were considered correct if they reasonably approximated the correct word.

There were three group conditions, containing 20 dyads each, and an individual condition containing 24 Ss. In the *divided labor* group condition a single puzzle outline was placed between the men, and one S was required to work only on the vertical words, while the other could work only on the horizontal words. Each S had definitions only for his half of the puzzle. Ss were allowed to converse, but they could not indicate what was on their own definition sheet. In the *shared labor* group condition Ss had a single puzzle outline and a single set of definitions. They were told that they must work together on each word in the puzzle and both must be agreed on a word before entering it into the puzzle outline. In the *control* condition dyads were given a single outline and a single set of definitions. Ss were told that they could go about solving the puzzle in any way they wished. In the *individual* condition each S was given a separate puzzle outline and set of definitions and told to work alone and silently on each puzzle.

C. RESULTS

Proficiency scores based on the two warm-up puzzles for each dyad member were summed to obtain a single group ability measure. These scores were then correlated with the cumulative performance scores for each two-minute interval. These results, along with those for individuals, are presented in Table 1.

In all cases the r s increased in magnitude to a peak which occurred between the fourth and twelfth minute, and then tapered off. In order to examine the Weitz hypothesis, that the maximum effect resulting from an independent variable will occur earlier on an easy task and later on a difficult task, the times at which the maximum r occurred within each condition were compared. Only in the divided labor condition was there any support for the hypothesis, with the maximum r occurring two minutes earlier on the easy task than on the difficult task. In the shared labor and control conditions, the maximum r on the difficult task occurred four minutes earlier than on the easy task, thus contradicting the Weitz hypothesis. In the individual condition, the maxima for both tasks occurred during the same two-minute interval.

The hypothesis that there would be a temporal decay in the relationship between ability and performance was examined by comparing the change in the size of the correlation between the peak r and the final r for each

TABLE I
CORRELATIONS BETWEEN MANIPULATED ABILITY AND GROUP PRODUCTIVITY^a

Task Condition	2	4	6	8	Minutes					18	30	In correlation
					1	1	1	1	1			
Individuals												
Easy	72	80	83	90	88	83	80	80	78	78	78	0.80
Difficult	60	69	70	78	72	76	76	73	71	71	71	0.78
Groups												
Divided labor												
Easy	52	62	69	79	(81)	76	74	72	74	76	76	0.80
Difficult	70	67	75	78	82	(84)	82	80	83	81	81	0.80
Shared labor												
Easy	53	73	73	73	(80)	74	59	56	48	46	46	0.80
Difficult	62	62	(65)	61	52	51	42	39	38	40	40	0.78
Control groups												
Easy	77	79	88	(89)	83	79	79	76	74	74	74	0.80
Difficult	65	(80)	77	76	76	77	78	79	77	78	78	0.80

^a Correlations in parentheses are the maxima, $r_{05} = .44$, $r_{01} = .56$ with 18 df.

^b Decay estimate = $r^2_{max} - r^2_{20}$. Significance tested under t test for correlated correlations.

* $p < .05$.

** $p < .01$.

condition. In every case there was a decline in the degree of association between ability and performance, thus confirming the expectation of a decline in the correlations. Changes in the r 's are presented in the last column of Table 1 in terms of r^2 . A t test for correlated correlations was calculated for each of the eight situations. Three of the four changes on the easy task were statistically significant (for individuals, $t = 2.418$, $p < .05$; for shared labor, $t = 2.817$, $p < .01$; and for controls, $t = 2.562$, $p < .01$), while none of the declines on the difficult task was significant. Thus, although all conditions showed the predicted decline, only on the easy task did this decline reach statistical significance. In other words, after an initial period of from two to four minutes, the r 's for the difficult task remained quite stable (not more than a 10% decrease in predicted variance) except in the shared labor condition, where there was a 26% decrease in association. Even here, however, the total decline in association was much smaller in the difficult task than in the easy task. On the other hand, the easy task appeared to provide a more powerful vehicle for detecting the effect, even though it was less stable over time.

D. DISCUSSION

The data presented here demonstrate a general decline in the association between member ability and group performance over time, thus confirming in dyadic situations a finding reported in a variety of settings for individuals. This effect, however, was much more pronounced on the easy task than on the difficult task, thus suggesting that previously reported findings may have to be qualified and that task effects may have to be more carefully considered in the study of the temporal decay phenomenon.

The Weitz hypothesis that maximum effects of an independent variable would appear earlier on an easy task than on a difficult task¹ does not appear to receive much support. In two cases, the maximum association between member ability and group performance occurred earlier on the difficult task, and for individuals, the maximum association occurred in the same time interval. Only for the divided labor condition did this hypothesis receive any support. It is clear, however, that the general observation of a temporal difference in maximum association as a function of task difficulty does in fact exist.

In group settings, other factors besides task type must also be taken into account in predicting temporal maxima of the effects of independent variables. For example, in examining the mean cumulative performance rates of these dyads (6) it was found that the control condition was generally

most efficient (i.e., performed most rapidly over most of the experimental period), followed by the shared labor condition (after the fourth minute) and finally by the divided labor condition. If speed of performance is used as a loose definition of easiness or favorableness of structural constraints, the control condition could be defined as relatively easy, followed by shared labor and then divided labor. When these definitions of situational ease are employed, the Weitz hypothesis receives support, as can be seen in Table 1, since the midpoint of the maxima for the control group occurs at minute 6, while for shared labor it occurs at minute 8, and for divided labor it occurs at minute 11. The fact that in this situation, structural favorableness was related to the dependent variable (the correlation between ability and performance), in the manner predicted by Weitz, but that task difficulty was not, suggests that the "early-late" phenomenon is more complex than originally conceived of by Weitz.

It is somewhat ironic that while group member *behaviors* have been subjected to direct observation over time by a number of investigators, productivity seldom has. The results presented here clearly point out the need to pay greater attention to the effects of time on the probability of obtaining an effect or, heaven forbid, of having an effect disappear as time goes by. In a more detailed report of this study, Shiflett (5) pointed out that, had other time limits been set, and without minute by minute recording of productivity, the pattern of results would have varied widely. If, for example, time limits had been set at 5, 10, or 15 minutes, rather than the 20 minutes actually used, different patterns of results would have occurred, in some cases ranging from complete contradiction to strong support of the same hypothesis, depending on which time limit was used.

These facts emphasize the theoretical as well as practical usefulness of obtaining continuous measures of performance over a reasonably long period of time. The institution of procedures of this sort may even be essential to a complete understanding of group interaction and performance. In particular, it would be useful to know whether these phenomena, particularly temporal decay in the ability-performance relationship, is explainable as a result of changes in the Ss, as suggested by Alvares and Hulin (2) and Dunham (3), to changes in the task itself, as suggested by Shiflett (6), to changes in the group situation over time, or to some interaction among these variables.

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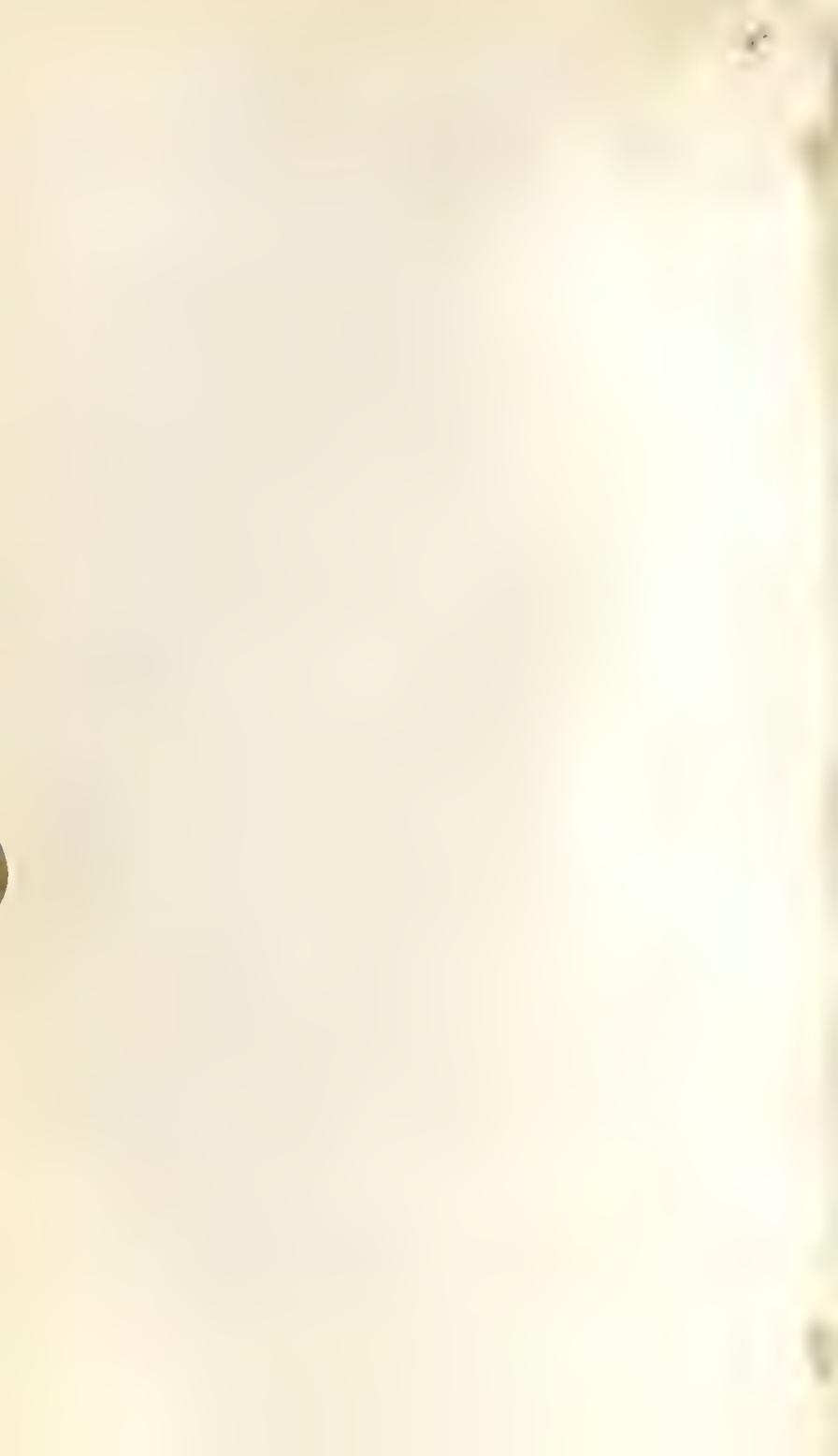
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INTERACTION EFFECTS OF PICTURE AND CAPTION ON HUMOR RATINGS OF CARTOONS*¹

*Journal of Social Psychology Association, Department of Sociology, University of Minnesota, and
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SUMMARY

The components of cartoon humor were analyzed in order to determine the effects of caption, picture, and interaction between caption and picture of the humor rating of the whole cartoon. Twenty-one male and female college students rated a set of 51 cartoons, presented either complete, or with picture or caption missing. It was found that the humor of the cartoon picture was positively related to the humor rating of the entire cartoon, and this effect was particularly true for highly humorous cartoons. The multiplicative interaction between picture and caption was highly correlated with humor ratings for funny cartoons, but not for less funny cartoons. This finding is taken as providing support for an incongruity notion of cartoon structure.

A. INTRODUCTION

Numerous studies of humor have used differences in cartoon ratings as a major dependent variable. In some the investigators have been interested in content differences among the cartoons, and mean ratings of cartoons grouped according to the content (e.g., sexual, hostile, nonsense, etc.) have been analyzed (*cf.* 7). Other investigators have focused on cognitive difficulty of cartoons and have analyzed cartoons grouped for comprehension (e.g., 11). Research has also investigated general motivation dynamics and has used change in cartoon ratings as an indication of these dynamics (e.g., 2, 9). While many investigators use gross ratings as an indication of humor appreciation, there has been no analysis of the general structural

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properties of cartoons which contribute to the degree of humor independent of thematic and comprehension variables.

Jones (3) presented a cognitive model of the structure of humor which relates specific cognitive processes to specific structural elements in a humor stimulus. For most cartoons, the two most prominent structural elements are the picture and caption. For a cartoon to be appreciated, it is necessary to perceive and understand both the picture and the caption separately, and then to integrate them into a meaningful whole.

The importance of the relationship between picture and caption was demonstrated in a study by Jones and Harris (4). Ss viewed slides of pictures and captions either in sequence (picture preceded caption by five seconds, or vice versa), or simultaneously (slide contained both, as in the original cartoon). Continuous heart rate was monitored and showed consistently greater increases when the cartoon elements were presented in sequence than as a whole.

Cognitive theories of humor almost always emphasize incongruity (6) and its resolution (3, 10). With cartoons, the information given is scant but carefully chosen, so that the viewer can reconstruct a meaningful associative framework. Somewhere in the visual material of the picture and caption (when both occur), there must be the elements comprising an incongruity, and, either structurally or by implication, material which permits its resolution.

For the present study, it is assumed that the picture and caption of a cartoon bear some complementary relationship to each other. While the entire cartoon comprises a meaningful Gestalt or figure-ground oscillation (*cf.* 1, 8), the information elements contribute in varying degrees to it. The experiment seeks to test the extent to which the rated humor of a cartoon can be predicted from the independently rated humor of the picture and caption.

Kagan (5) suggested that the creation of a schema is a pleasurable event. That creation can be seen as the recognition of the meaning or resolution of the incongruity in a cartoon. It is assumed that the cognitive work required to achieve successful resolution contributes to the humor. If the humor (meaning) of the cartoon requires integration of the information of both the picture and caption, it should be funnier (other things being equal) than if the humor meaning is contained in the picture or the caption alone. This analysis leads to the prediction that the humor of the whole cartoon will be more than a linear function of the ratings of either the picture or the caption; thus, it will be a nonadditive function of the two.

B. METHOD

1. Subjects

Eight females and 13 males (mean age of 22.4) at Harvard University summer school served as Ss for this experiment. They were recruited by sign-up sheets posted in the social science building. Each was paid \$1.00 for participation in the 20-minute experimental session.

2. Materials

A set of 51 cartoons was selected from popular magazines (*The New Yorker*, *Playboy*, and *Saturday Review*) to represent a broad range of humor content and artistic style. The criteria for selection of cartoons were (a) drawing was black and white; (b) all had captions; (c) captions varied between those in which virtually no information was conveyed ("Did you hear something?" to those which were themselves jokes, "Cut it out Oedipus, she's old enough to be your mother!") In the case of the first caption, the corresponding picture shows a very large steamroller passing through an intersection and over a small automobile. The driver speaks to his fellow passenger. In the second case, the picture depicts a young Greek lad trailing behind an older woman while the young lad's friend comments.

All cartoons were xeroxed, and one of three forms (picture only, caption only, or whole cartoon) of each of the 51 cartoons was used in each booklet. Three booklets were thus created and the order of the 51 cartoons was the same in each. Thus each S rated each cartoon in one of its three forms. Within each booklet, the three cartoon forms were presented in alternating sequence—picture only—caption only—whole, and so on.

3. Procedure

When Ss arrived at the experimental room they were given a booklet and informed that they would be rating the funniness of cartoons, cartoon pictures, and cartoon captions. They were handed a rating sheet with 51 nine-point Likert-type scales labeled at the end points with 9—"very funny" and 1—"not at all funny."

C. RESULTS

Mean humor ratings for all measures are presented in Table 1. Picture and caption means were lower than the means for the whole cartoon—indicating that a whole cartoon's humor was in most cases greater than that of either its pictorial or caption components.

The mean rating for each of the three sets of booklets was computed and subtracted from the mean score for each cartoon element (picture, caption, or whole cartoon rating) in each booklet, respectively. This was done to eliminate biases in group effects which may for any given cartoon element produce inflated or deflated ratings. Thus, for a given cartoon, the whole rating is equal to the mean of subject ratings minus the mean of the ratings of all cartoon elements in the booklet in which the whole cartoon appeared. Since Ss were tested within booklets, this correction can be seen as eliminating "group effects."

Only the corrected results were employed in the final correlations. Uncorrected means, however, indicate essentially the same pattern as the corrected figures. The interaction effect was determined by multiplying the corrected picture mean for each cartoon (i.e., with the mean for all pictures subtracted) by the corrected caption mean for each cartoon.

A highly significant positive relationship was found between picture ratings and total cartoon ratings, although correlations between total cartoon ratings and caption ratings and between total ratings and the multiplicative interaction were not statistically significant (see Table 1). A measure created by adding the ratings of picture and caption was also significant, an effect due largely to the correlation of the picture rating with the total cartoon measure.

The set of cartoons was subsequently divided in half on the basis of the humor rating for the whole cartoon into groups of highly humorous cartoons and less humorous cartoons. For those cartoons judged to be least funny, no significant correlations were found between the total humor rating and either picture, caption, or interaction of the two components. For those cartoons judged most humorous, however, a strong positive correlation occurred between the total cartoon and the rating of the picture. Although the correlation with the caption was insignificant, the measure created by adding the ratings of the picture and the caption correlated significantly with the total rating. The multiplicative interaction term for these successful cartoons was strongly negatively² correlated with the total rating.

² The multiplicative relationship between picture-caption interaction and total humor was positive (i.e., the greater the interaction, the funnier the cartoon); however, subtracting the group effect resulted in negative scores—thus, a strong interaction effect occurred when large positive numbers for pictures were multiplied by large negative numbers for captions, producing the substantial negative correlation with total humor.

TABLE 1
MEAN HUMOR RATINGS AND CORRELATIONS OF MEAN RATINGS OF WHOLE CARTOONS
WITH PICTURE AND CAPTION RATINGS

Measure	Whole cartoon ratings		
	All cartoons (<i>N</i> = 51)	More funny (<i>N</i> = 25)	Less funny (<i>N</i> = 26)
<i>Mean ratings (raw scores)</i>			
Whole cartoon	4.84	5.66	4.04****
Picture	3.00	3.40	2.629****
Caption	3.06	3.03	3.09
<i>Correlations of the ratings of whole cartoons (based on corrected ratings)</i>			
Picture ratings	.45***	.51**	.11
Caption ratings	-.10	-.23	-.04
Picture × Caption interaction	-.15	-.60**	-.04
Picture + Caption	.33*	.35*	.03

Note: Cartoons were divided into more or less funny categories on the basis of whole cartoon ratings.

* Difference between more or less funny cartoons.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

D. DISCUSSION

The findings for highly humorous cartoons indicate the importance of the interaction between picture and caption humor in determining cartoon humor. The pattern of relationships can be described as follows: A substantial amount of humor is contained in the picture alone as shown by the high correlation between picture ratings and whole cartoon ratings. However, the highest degree of humor was a joint function of the humor of both the picture and the caption, where the funnier the picture *and* the less funny the caption, the funnier the whole cartoon. No component relationship existed for cartoons receiving low ratings. Interestingly, the caption ratings for the less funny cartoons are higher than the picture ratings. This suggests that for these cartoons, the captions are essentially verbal jokes and the pictures add little if anything to them. This relationship is opposite from that suggested by the multiplicative relationship obtained for funny cartoons.

This finding supports an incongruity notion of humor, since it suggests that successful humor is not merely a combination of bizarre elements; rather it is the conjunction of a bizarre or incongruous element in an

expected setting—or an expected element in a bizarre context. This effect seems not to have held true for less funny cartoons.

In addition, cartoon humor was correlated with the humor of the picture. Captions provided the "punchlines" for the cartoon, but it was apparent that the humor of the visual situation in which they were embedded determined humor, while the caption itself did not. The cognitive dynamic suggested by these results is as follows: a picture presents a situation in which something unusual, unexpected, or not easily explicable is depicted. A caption is written which directs the viewer to the salient elements of the picture and provides an explanation for the events or exposes the psychological or emotional state of the characters shown. It is the dynamic interplay between picture and caption that describes the multiplicative relationship and the most humorous cartoons.

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CONTROL PROFILES OF FOOTBALL PLAYERS, TENNIS PLAYERS, AND NONATHLETES¹

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SUMMARY

Control profiles of three samples of male college students (49 football players, 70 tennis players, and 88 nonathletes) were determined by administering a battery of sphere-specific scales measuring perception of control. Athletes reported greater perception of control than nonathletes in all behavioral spheres. Football players were particularly high in interpersonal control, whereas tennis players rated highest in personal efficacy. Tennis players experienced higher personal efficacy when their sport was in season. Within each sport an athlete's success was related to his belief in Machiavellian tactics.

A. INTRODUCTION

The personality of the athlete has been studied thoroughly enough so that the trait structure is now being fleshed-in. A number of recent books have provided reviews of the most reliable conclusions concerning the modal athletic personality and how it differs from that of the nonathlete (1, 3, 11). In particular, it has consistently been found that athletes are more sociable, more dominant, more extraverted, more conventional, more self-confident, and more tough-minded than nonathletes (e.g., 2, 6, 8).

It is, of course, difficult to verify the causal direction in the relationship of personality to proficiency in sports. It may be that the activity and competition entailed in sports contests inculcate a certain personality syndrome. Alternatively, the relationship may be a result of selection: certain personality types may be drawn to sports; or a certain disposition may be required to remain among successful athletes with others tending to drop

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out. In this paper, the causal direction will purposely be left unspecified, since the arguments forwarded here should hold in either case.

There is some evidence that athletes in individual sports are more introverted, more creative, more aggressive, and less affiliative (1, 8) than athletes in team sports. Indeed, Kroll and Crenshaw (7) have found evidence for a general personality factor (group-dependent *vs.* self-sufficient) which best separates team- from individual-sports athletes. Such personality differences follow reasonably from the self-centered nature of individual sports which contrasts with the cooperative, interdependent relationship required among athletes on a team. When superordinate goals are at stake, selfish concerns must be suppressed and the individualistic athlete is a disadvantage to his team.

A personality trait which has been conspicuously neglected in research on athletes is locus of control expectancy. It seems reasonable to hypothesize that the athlete experiences a firm perception of control over the reinforcement contingencies he encounters. In superior athletes one would expect a strong sense of personal efficacy: i.e., a sense of control over difficult tasks that require skill and determination to master. Furthermore, the athlete's general self-confidence should result in a higher than average sense of control in interpersonal interactions. In particular, athletes who are successful in team sports should experience high levels of interpersonal efficacy.

As a personality trait, control expectancy has traditionally been assessed by means of Rotter's (9) locus of control scale. Although fairly robust across a variety of life situations, the scale is not optimal for specific applications (10). However, the recently developed spheres-of-control (SOC) battery (4) does provide a profile of an individual's pattern of control expectancies. This battery includes separate measures of interpersonal control, personal efficacy, and sociopolitical control; these cannot be distinguished by means of the Rotter scale. Consequently, the SOC battery was used in this study to permit revelation of any differential patterns of control in the various athletic groups.

A comparison of the personality of athletes and nonathletes can be particularly informative at Ivy League universities, since the two groups are roughly comparable in SES, intellectual ability, etc. This comparability is suspect in a majority of previous studies conducted at universities where athletes do not have to meet the usual admissions criteria, and athletic scholarships are dispensed.

At the authors' university the most prominent team sport was football,

and tennis was an equally prominent individual sport. By administering the SOC battery to these athletes and a sample of nonathletes from the same school, it was possible to test the following hypotheses:

1. Team athletes are higher than individual athletes on interpersonal control and lower on personal efficacy.
2. Both control measures are positively related to proficiency within a sport.
3. Both control measures are higher when the sport is "in season."
4. Team athletes have a general preference for group activities.

B. METHOD

1. Subjects

The Ss were samples from three different populations of male college students: (a) students taking undergraduate psychology courses at an Ivy League university, exclusive of varsity athletes ($n = 88$); (b) the entire football team at the same Ivy League university ($n = 49$); (c) the tennis team from the same university and several other Ivy League universities in the fall ($n = 42$) and in the spring ($n = 28$). None of the subjects was paid; the nonathletes completed the inventory as part of a course requirement; the athletes were asked to complete the form by a teammate.

2. Instrument

The personality inventory comprised 81 seven-point Likert-type items forming seven subscales. Three subscales are part of the spheres-of-control battery developed by Christie and Paulhus (4). Each 10-item subscale measures control expectancy in a different sphere of behavior: (a) Personal efficacy (PE) assesses perceived skill in mastering the nonsocial environment. (b) Interpersonal control (IP) assesses perceived skill in controlling dyadic and group interactions. (c) Sociopolitical control (SP) assesses perceived efficacy of the individual in controlling social and political institutions.

Also included were two additional subscales which are derivatives of the Mach IV scale as developed in Gold, Christie, and Friedman (5). One scale assesses Machiavellian cynicism (MC), the individual's distrust of the motives and character of other people. The second measures Machiavellian tactics (MT), the willingness of the individual to use duplicit strategies to control other people for his own purposes.

3. Procedure

The complete inventory was administered to the football and tennis players and to the nonathlete sample during the fall semester. The tennis players also took a shorter version of the inventory late in the spring semester. Note that fall is "in-season" for football, and spring is "in-season" for tennis.

Each football player was also rated on a scale of 1 to 3 for athletic proficiency on the team based on how often he played (i.e., first, second, or third string). Tennis players were rated from 1 to 10 according to their competitive record.

In addition, all of the athletes and some of the nonathletes ($n = 70$) were asked to state their preference for the group sport or the individual sport in seven pairs of sports which were matched roughly for similarity: 1) jogging vs. group calisthenics, 2) pinball vs. football, 3) chess vs. bridge, 4) volleyball vs. handball, 5) swimming vs. softball, 6) track vs. baseball, 7) gymnastics vs. crew rowing.

C. RESULTS

For football players ($n = 49$), tennis players ($n = 28$) and nonathletes ($n = 88$), the personal efficacy means were 53.4, 57.1, and 50.8, respectively. The corresponding means for interpersonal control were 51.9, 49.5, and 46.8. For sociopolitical control the means were 38.2, 38.7, and 38.5. The football and nonathlete means are from the fall semester, whereas the tennis player mean is from the spring to permit "in-season" comparisons. As predicted, on personal efficacy, the tennis players scored significantly higher than football players [$t(75) = 1.91, p < .05$]. The latter scored higher than nonathletes [$t(135) = 2.19, p < .01$]. In contrast, the football players scored higher than tennis players on interpersonal control [$t(75) = 1.79, p < .05$]. The latter in turn scored higher than nonathletes [$t(114) = 2.56, p < .01$]. As a pooled sample the athletes scored reliably lower than nonathletes on Machiavellian cynicism [$t(163) = 2.01, p < .05$]. (For this comparison the pooled sample consisted of all athletes completing the forms in the fall; tennis players did not complete the Machiavellian items in the spring.) There were no differences in the Machiavellian tactics or sociopolitical control means.

The mean control scores for tennis players during the fall—i.e., out-of-season—were 48.9, 53.0, and 38.6 for interpersonal, personal, and sociopolitical control respectively. The personal efficacy scores were sig-

significantly higher in-season than out-of-season [$t(68) = 2.25, p < .05$], the interpersonal control means did not differ significantly. The predicted correlations between the control measures and athletic proficiency were not confirmed. However, proficiency ratings were significantly related to scores on Machiavellian tactics for both football players ($r = .26, p < .04$), and tennis players ($r = .38, p < .05$).

An index of preference for group sports was computed by assigning '1' for each group sport selected and "zero" for each individual sport selected from the pair-list. This provided an index which could range from 1 to 7. The mean index ($M = 5.96$) for football players was reliably greater than the mean ($M = 4.12$) for tennis players [$t = 3.15, p < .01$]. However, the pooled athlete ($M = 4.67$) sample did not differ from the nonathlete ($M = 4.55$) sample [$t = .91, p > .30$].

Football players reported that 70% of their social lives involved people they met through sports activities. The corresponding figures for tennis players and nonathletes were 51% and 18%, respectively.

D. DISCUSSION

The previous finding that team-sport athletes are more sociable and extraverted than individual-sport athletes (2, 6, 8) was supported by the present study in two ways: football players experienced greater interpersonal control than tennis players and they reported a stronger preference for group sports activities. Moreover, a greater percentage of the social life of football players revolved around people they had met through sports activities.

The higher personal efficacy of tennis players implies that they felt a strong sense of personal skill, of mastery of their environment, and of the benefits of persistence. Football players also exhibited high levels of personal efficacy compared to nonathletes, but they scored lower than tennis players. Conceivably, this difference is attributable to the greater emphasis in football training on teamwork and cooperation and a lesser emphasis on individual achievement. Note that these differences obtained although none of the scale items dealt directly with sports activities.

While the modal personality of the athlete is distinguishable from that of the nonathlete, it now appears that the seasonality of sports has important effects on the differences. In this study a higher level of personal efficacy was experienced by tennis players during the tennis season when their skill was being demonstrated and applauded. In the off-season the tennis player must engage in the drudgery of practice without immediate payoffs. Even

if he plays sports other than his forte during the off-season, he probably does not experience his maximum degree of competence and success. It is possible that many previous studies of personality measures on athletes have been biased one way or another because the seasonal nature of the sport was not considered.

One might argue that, in this study, the springtime increase in the personal efficacy scores indicated a general upward shift which may have been experienced by the other subgroups: i.e., this may be a seasonal shift or maturation artifact. Unfortunately no measures were taken on the football players in the spring for comparison. However, for the nonathletes, data were available from the previous spring, and a comparison showed little difference in the personal efficacy means from spring to fall.

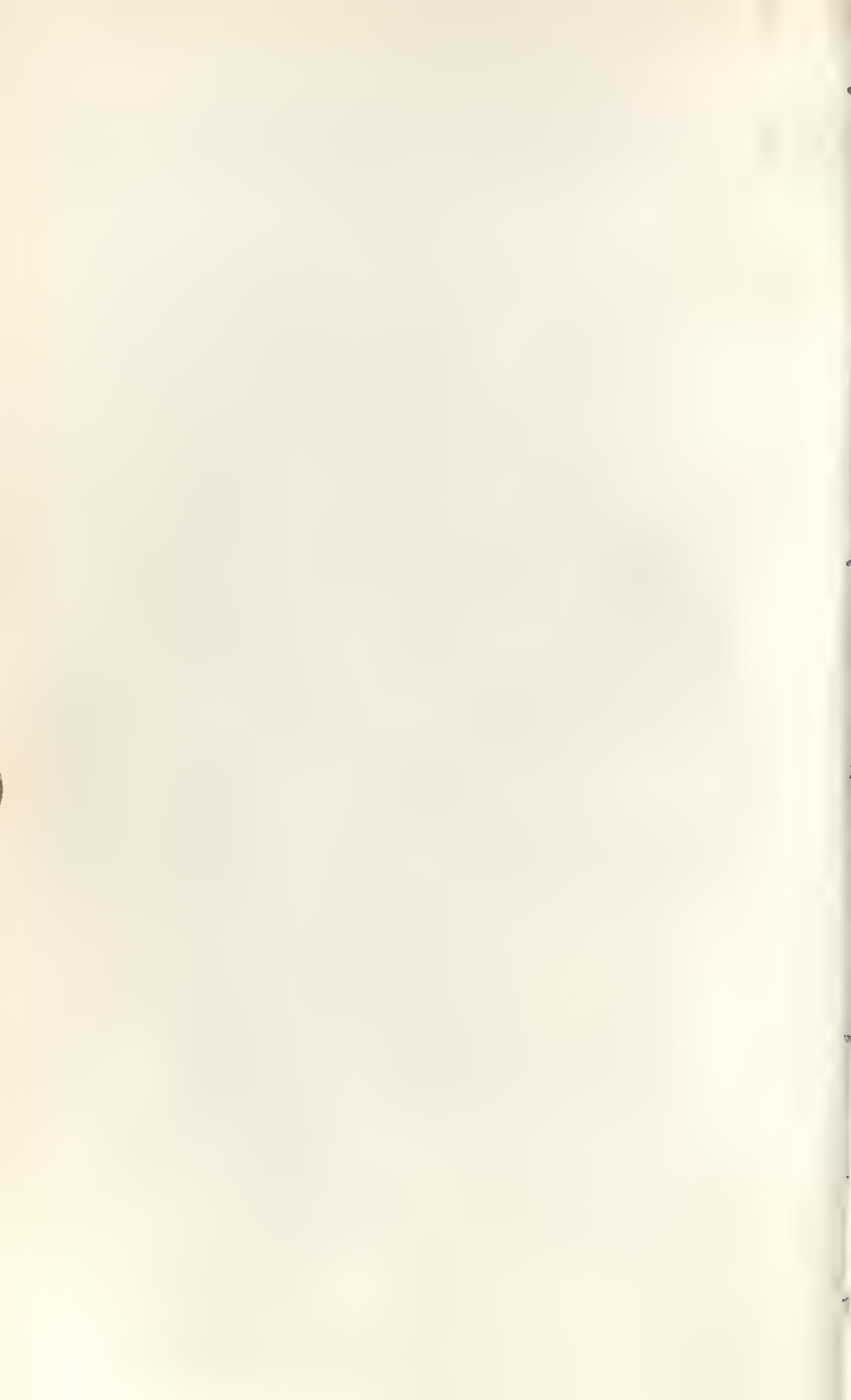
The finding that, on both teams, Machiavellian tactics related to individual proficiency ratings was serendipitous, and any explanation must necessarily be *ad hoc*. Since this trait designates a willingness to use duplicit interpersonal tactics, it is possible that the high Machiavellian tactics football player could gain some advantage on the field by judiciously pushing every rule to the limit. In contrast, the low Machiavellian tactics player might be limited by unwritten rules and a more acute sense of fair play. Alternatively, since proficiency was measured by amount of playing time, the high Machiavellian tactics player may have manipulated his relationship with the coaches to maximize his chances of being played. With tennis players the latter explanation is unlikely, since proficiency was measured by competitive record. However, on the court, a willingness to use strategies designed to unnerve or "psych-out" the opponent while resisting emotional involvement could provide a substantial advantage to such a player.

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COMPLIANT REACTIONS TO GUILT: SELF-ESTEEM OR SELF-PUNISHMENT*

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SUMMARY

Two explanations for the consistent finding that compliant behavior increases following experimentally induced guilt were explored. Sixty male and female undergraduates classified as either guilt induced or control *Ss* were asked to comply to a request to make phone calls to prospective *Ss*. In one condition, they were asked to tell prospective *Ss* a lie, while in the other condition they were merely asked to remind the *Ss* about the time and place of the experiment. The dependent measure was the number of phone calls an *S* was willing to make. It was hypothesized that guilty *Ss* would comply equally to both requests if the compliant behavior was a form of self-punishment, since punishment is a reasonable expectation following a transgression. If compliance were aimed at raising self-esteem, then guilty *Ss* should comply more to the nondeceptive request. Results indicated that guilt induced *Ss* were more willing to make nondeceptive phone calls than deceptive phone calls. Controls were equally willing to make either type of call. It was concluded that compliant behavior following induced guilt may be aimed at raising one's self-esteem back to some chronic, preinduction level.

A. INTRODUCTION

Research has consistently demonstrated that the arousal of guilt increases an individual's willingness to engage in compliant behavior. This guilt compliance effect has been found in experiments using a wide variety of procedures to induce guilt and techniques to measure the level of compliance. Guilt induction has involved such behavior as the *S* telling the *E* a

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he (5, 8), upsetting the crucial order of a graduate student's index cards (12), and induced cheating on a test (2, 9, 10, 11). Following such experimentally induced guilt, Ss have complied more frequently than controls with requests for donating money for research (12), making phone calls for a civic campaign (8), circulating a petition (11), and scoring tests (9, 10).

The research to date has not clearly defined the processes underlying this guilt-compliance phenomenon. Direct compensation to the harmed individual is not a necessary condition for the expiation of guilt. Derrington and Macker (4) have shown that the altruistic behavior following guilt induction does not have to be directed toward the harmed individual. In their study, guilt induced Ss complied by donating blood to a hospital. Thus, the motive for compliance seems to be more complex than simple restitution.

Two processes underlying the guilt-compliance phenomenon, self-esteem and self-punishment, have been discussed in the literature. The self-esteem explanation is based on the notion that the compliance is an attempt to raise one's self-esteem back to some pre-guilt-induction level. The initial transgression has the effect of lowering the S's opinion of himself. The compliant behavior then serves as a means by which he may reaffirm a **more positive self-image** (9, 10, 11).

Cognitive consistency theory, as discussed by Aronson and Carlsmith (1), provides the basis for the self-punishment explanation of the guilt-compliance phenomenon. It predicts that an individual's behavior will be directed at confirming his self-image and/or his behavioral expectations, be they positive or negative. Graf (6) has suggested that the behavioral expectancy of the guilty subject may be that he should receive some form of punishment for his transgressions. He might then attempt to alleviate his guilt by subjecting himself to punishment, thus enabling him to perceive **his world as consistent**.

This self-punishment argument also follows from the work of Lerner and associates (7). They have stated that individuals have a need to believe in a just world, a world in which everyone gets what he deserves. An individual who has harmed another might well expect punishment for his transgression. Also, in accordance with the self-punishment argument, Berscheid, Boye and Walster (3) have shown that an aggressor will perceive the relationship with his victim as equitable if the victim is given an opportunity to retaliate. The retaliation may serve as punishment and therefore a retribution for the aggressor's wrongdoing. The act of compliance following the guilt can then be perceived by the S as a form of self-punishment, making the relationship with the victim an equitable one.

According to cognitive consistency theory, belief in a just world, and equity theory, induced guilt might elicit nonaltruistic behaviors in order to confirm the *S*'s negative self image or to confirm his behavioral expectation of punishment.

In previous research reporting the guilt compliance phenomenon, the data can be construed as supporting the self-esteem or the self-punishment hypothesis. If guilt is indeed alleviated in accordance with the theory of self-punishment, then *S*s would be expected to comply with nonaltruistic as well as altruistic requests. Compliance with the nonaltruistic request could be viewed by the *S* as a form of punishment because it is out of the ordinary behavior, which causes the *S* some sacrifice, discomfort, or inconvenience.

In the present study guilt-induced and control *S*s were asked to comply with either a deceptive request which required the *S*s to tell a lie or with a nondeceptive request. According to the self-punishment hypothesis the control *S*s were expected to comply with the nondeceptive request more than the deceptive request. Guilty *S*s were expected to comply equally with both types of requests.

B. METHOD

The *S*s were 14 male and 46 female introductory psychology students at San Diego State University who participated as a course requirement.

Guilt was induced by having *S*s ostensibly upset a graduate student's crucially ordered IBM cards. Experimental and control *S*s were then asked by a confederate (*C*) to make phone calls to prospective *S*s. In the deceptive condition *S*s were asked to tell prospective *S*s a lie. After the confederate's initial introduction as a graduate student having difficulty with *S*s showing up for his experiment, he stated that he thought the reason was that it had gotten around that his experiment involved a noxious stimulus. He then explained that he had been asking students to telephone prospective *S*s and tell them that they had already been in the experiment, that it wasn't at all unpleasant, and that they should be sure to show up. In the nondeceptive condition they were merely asked by the *C* to call and remind prospective *S*s about the time and place of the experiment. *S*s were debriefed immediately after they stated how many phone calls they were willing to make.

C. RESULTS

A two factor analysis of variance (guilty/nonguilty by deceptive/nondeceptive) was performed on the dependent variable of the number of

telephone calls each *S* was willing to make. The mean number of calls for each condition is presented in Table 1. The analysis of variance yielded a significant difference between the experimental and control groups for compliance ($F = 3.97$, $df = 1, 56$, $p < .05$) and a significant compliance by request interaction ($F = 5.36$, $df = 1, 56$, $p < .05$). Simple effects tests indicated that control *Ss* were equally likely to comply with the deceptive or the nondeceptive request. Guilty *Ss*, however, were willing to make significantly more nondeceptive phone calls than deceptive phone calls ($F = 6.22$, $df = 1, 56$, $p < .05$).

D. DISCUSSION

The results confirmed the guilt-compliance effect. The experimental *Ss* offered to make significantly more telephone calls than did the controls. The observed interaction did not support the self-punishment hypothesis.

There was no difference between the number of calls the control *Ss* offered to make to the deceptive and the nondeceptive requests; however, guilty *Ss* were more likely to offer to make phone calls which did not involve telling a lie.

These results indicate that the self-esteem hypothesis, according to which *Ss* comply in an effort to enhance their lowered self-concepts, would be the more appropriate explanation for the guilt-compliance effect. The fact that the control *Ss* were equally likely to comply with either the deceptive or the nondeceptive request underscores the high degree of compliance typical of laboratory studies of this nature. The finding that the guilty *Ss* were more willing to comply with the nondeceptive request than the deceptive request suggests that the guilt manipulation served to sensitize these *Ss* to the nature of their compliant behavior. It would appear that compliance to the nondeceptive request could provide a means by which these *Ss* could raise or enhance their lowered self-image, while compliance to the deceptive request might serve only to reaffirm or validate their already lowered

TABLE 1
MEAN NUMBER OF CALLS *SS* WERE WILLING TO MAKE IN EACH EXPERIMENTAL CONDITION

Group	Nature of request		Mean
	Deceptive	Nondeceptive	
Guilt	12.27		
Control	13.07	21.00	16.63
Mean	12.67	10.33	11.70
		15.66	

self images. It is recognized that the cultural bias against performing deceptive behaviors may have affected the experimental results and that cross-cultural research would be necessary to determine the artifactual impact of this cultural norm.

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TASK CONTENT AND SEX DIFFERENCES IN CONFORMITY¹

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SUMMARY

Sex-type of task content and influence source were manipulated to produce varying amounts of conformity according to the sex of *S*. Pilot data from 28 university students aided in the construction of sex-related questionnaire items. The group situation involved 62 volunteer confederates in varying combinations of same sex, three person groups to exert Asch-type pressure on 48 *S*'s. An additional 74 *S*'s participated in a nongroup situation in which questionnaires were answered without benefit of feedback from other respondents. A $3 \times 3 \times 2$ mixed factorial design was used with (a) sex-type of group, (b) sex-relatedness of items, and (c) sex of *S* as factors considered. Amount of conformity was found to be related to sex-type of influence source, sex-relatedness of items, and sex of *S*. Variance in conformity was explained in terms of *S*'s perceived relative competence of himself and the group.

A. INTRODUCTION

In the study of conforming behavior, sex differences have often been found to indicate that American females tend to conform more than males (4, 6, 7, 9, 11, 12, 14, 17). The explanation for this difference has usually centered around the cultural stereotype of the female as passive, compliant, and agreeable. However, all of the factors that can account for conforming behavior are not considered in experimentation. One such variable is type of activity or task involved. Conformity responses are found to increase in *S*'s on issues in which their own sex is perceived to be relatively uninterested or inexperienced (5). Also, task items may be more difficult for

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females (16) and/or the information involved in the task may be more familiar to males e.g., sports (9). The fact that difficult tasks often result in higher conformity to a group (1, 3, 15) suggests that the inflated conformity scores of female Ss may be due to differences in task competence.

Females as a group have been shown to cause less conformity in Ss than males as a group. Tuddenham, Macbride, and Zahn (18) found that as the number of females composing the group increased, conformity decreased. This effect also may be due to the use of male-oriented tasks. That is, a group composed of females would be perceived as less familiar with male-oriented items than a group composed of males. Their responses would be considered less accurate than the responses of a male group, thus producing less conformity.

Relative competence (8) can be used to explain perceived task competence and consequent conforming behavior. This concept is applied to the individual's perceived relationship between his own competence and the competence of the group of which the individual is a member. A member of a group implicitly will evaluate his competence to deal with the task. If he perceives himself as more competent than the group, conformity will be lower than that of the individual who perceives himself as less competent than the other group members (8, 9, 19). In the latter instance, relative competence will favor the group members.

Individual certainty in dealing with task items can arise from previous experience with the task (10, 13). Thus, in the evaluation of their own ability when dealing with task items characteristically associated with females (female-related), females should gain competence. Relative competence should shift to the group when dealing with task items that are perceived as familiar to the group. For example, a female-related task should produce perceived competence in favor of a homogeneous female group response, thus increasing the S's conformity to the female group.

It is often difficult for an individual to evaluate the competency of a newly formed group of peers with whom he is unacquainted. One identifiable characteristic in such a group is sex composition. When confronting a group for the first time, an individual's evaluation of the group's competency and information sometimes can be determined by noting the sex composition of the group (1, 18). This is particularly true when the task content is either female- or male-related.

The purpose of this experiment was to manipulate the variables of sex of the S, sex of the group, and sex-relatedness of the task content to demonstrate a relatively similar number of conforming responses for both sexes.

The experiment also was designed to increase the power of the female group in producing conforming responses to equal that of the male group. Further, the study attempted to test the widely held contention that female Ss would consistently conform more than male Ss.

In varying the perceived competence of the group by using both female- and male-related items and by keeping task difficulty constant, it was hypothesized that for male-related items, male and female Ss would conform to a male group and that for female-related items, male and female Ss would conform to a female group.

B. METHOD

1. Subjects

Ninety-nine male and 121 female volunteers were solicited as Ss through posted sign-up sheets or through requests in undergraduate psychology classes. Most Ss volunteered in order to fulfill introductory psychology course requirements. Some of these students also participated as confederates (Cs) of the *E* after serving as Ss. All Ss were students of Appalachian State University.

2. Apparatus

a Pilot Study. Initially 20 males and 28 females matched 47 consumer products to 263 respective brand names. They also indicated how certain they were of their matchings. Ambiguous brand names (those matched with little certainty by 85% or more of the respondents) were determined. Another 25 males and 25 females rated each consumer product according to which sex should be more competent in identifying the brand names of the items. By this rating, consumer goods were specified as female-related, male-related, or neutral.

b Task Questionnaire. From these data a multiple choice questionnaire requiring identification of the correct brand name for a consumer product was constructed. Six questionnaire items were compiled from each of the three aspects of the sex-relatedness dimension, with the use of ambiguous brand names. These 18 items (designated critical) were used to measure susceptibility to conformity. An additional 12 items were compiled with the use of nonambiguous brand names and were combined as filler items with the 18 experimental items. The 30-item questionnaire was purported to measure college students' awareness of consumer goods.

The critical items contained four alternatives, two of which were am-

biguous brand names. One of these alternatives was the legitimate brand name for the consumer good comprising the item and the other ambiguous alternative was the "correct" response given by the C group. The other two alternatives in the item were considered nonambiguous according to the initial data. Filler items required different responses by each C group member to mask the unanimous group responses enlisted in the experimental items. Critical and filler items were randomly intermixed with the exception of the first three items in the questionnaire which were filler items. The questionnaire was used in the group and the nongroup situations.

3. Procedure

Sex of S and type of group served as between S factors. Item type (sex-relatedness) served as the within Ss factor producing a three factor mixed design.

a. The Group Situation. Forty-eight Ss participated in the group situation: Twelve males were combined individually with a male group (three male Cs) and 12 with a female group (three female Cs) in an Asch-type pressure situation (2). Also, 12 females were combined individually with a male group and 12 with a female group.

All were told they were going to respond to a survey of college students' awareness of consumer goods. The E also explained that responding would be done orally to save time and to facilitate data collection. Through a ruse (assigning order of responses to the Cs and Ss) it was arranged that Ss always answered the questionnaire items after the other three group members. The participants were instructed to give the most appropriate response for each item, and were told that a correct alternative was present in each case. The E also explained that males may be more aware of some of the items and females may be more aware of others.

b. The Nongroup Situation. The third level in the type of group factor was a situation in which no feedback concerning the allegedly correct response was given by respondents. Ss (30 male and 44 female) answered the questionnaire individually with no group influence.

The nongroup situation was devised to determine how Ss would answer the questionnaire items without any pressure from others who had previously responded. They were told that they were answering a survey on college students' awareness of consumer goods. The questionnaire was distributed with answer sheets which were used to answer the items individually.

All Ss in the group and nongroup situations were debriefed upon completion of the questionnaire. One half of these combinations were conducted by a female E and one half by a male E.

C. RESULTS

1. Conformity Measure

The dependent variable was measured as the frequency with which all Ss responded with the same incorrect alternative given by the group on experimental items. The total number of these incorrect conforming responses given by the S was the index of the amount of conformity to the group. In the nongroup situation, the dependent variable was measured as the frequency with which the incorrect alternatives used in the group situation were given as responses.

Table 1 presents the percentage mean number of incorrect conforming responses given by the S according to the Group-Nongroup factor across items. According to a $3 \times 3 \times 2$ (groups by items by Ss) mixed analysis of variance there were no differences in overall conformity between male and female Ss. The main factor of sex of S was not statistically significant ($F < 1$, $df = 1/116$). The main factor of groups was significant ($F = 69.16$, $df = 2/116$, $p < .001$). This can be attributed to the difference in the number of incorrect alternatives given in the group and the nongroup situations.

2. The Group Situation Alone

Because of the difference in the number of incorrect conforming responses given by Ss in the group and the nongroup situations, a second mixed analysis of variance was made by excluding the nongroup situation scores ($2 \times 3 \times 2$, groups by items by subjects). This analysis eliminated the significant main effect of groups but retained significant item by S ($F = 3.60$, $df = 2/88$, $p < .05$) and item by group ($F = 6.97$, $df = 2/88$, $p < .005$) interactions.

TABLE 1
PERCENTAGE MEAN INCORRECT CONFORMING RESPONSES ACCORDING TO GROUP
COMPOSITION AND ITEM

Item	Male group		Female group		No group	
	Males	Females	Males	Females	Males	Females
Male-related	72.3	76.5	53.0	69.3	25.0	46.0
Neutral	79.0	69.3	79.0	76.3	52.0	42.0
Female-related	71.0	62.4	83.0	77.8	43.9	42.0

The interaction of the sex-relatedness of items and the sex of *S* indicates that, although *Ss* of both sexes showed a similar degree of conformity, the number of incorrect conforming responses varied as a function of the sex-relatedness of items. The percentage mean conforming responses indicates that female *Ss* conformed less to female-related items than to neutral items, and less to neutral items than to male-related items with a male group. Male *Ss* gave fewer incorrect conforming responses to male-related items than to neutral or female-related items with a female group.

Further, groups of males and females were able to produce approximately equal amounts of incorrect conforming responses from *Ss*. But the groups were more powerful in producing conforming behavior when the sex-relatedness of the item matched the sex of group. Thus, as in Table 1, both males and females with a female group gave more incorrect conforming responses to female-related than they did to neutral items, and more to neutral than to male-related items. For females with a male group the greatest number of incorrect conforming responses occurred on male-related items; for males the greater number occurred on neutral items. With a male group, the number of incorrect conforming responses given decreased, going from neutral to female-related items. In summary, incorrect conforming responses occurred most often when the sex-relatedness of items and sex of group were the same; the least often when sex-relatedness of items and sex of group were opposite.

D. DISCUSSION

A nonsignificant main effect of sex of *S* on conforming responses obtained in the present research is similar to the results found in a part of the Sistrunk and McDavid study (16) in which sex-typing of the task and of the influence source was considered. However, the influence source was not physically present in the Sistrunk and McDavid study (16) but was built into the questionnaire format. It is noteworthy that the nonsignificant main effect of sex of *S* was obtained in the present study in which the influence source was physically present. Past research has indicated that the group pressure setting should enhance the chances of obtaining greater influenceability among females than males.³ This nonsignificant main effect of sex is expected to occur more often in individual testing formats particularly when sex-relatedness of items is considered.

A significant sex of *S* by sex-relatedness of items interaction was also

³ Dr. Alice Eagly, personal communication.

reported in the Sistrunk and McDavid study (16). This interaction was due to an increase in conforming responses of female Ss on male-related items. The present study has shown a more symmetrical interaction among college students sampled in which male Ss also gave more conforming responses to opposite sex-related items.

The increase in conformity apparent in the group situation can be attributed, among other things, to the factors of oral responding and consequent responsibility for answers, and availability of other information indicating the "correct" alternatives. In the group situation the orderly interaction of sex of S, sex of group, and sex-relatedness of items indicated a further explanation for the increased number of incorrect conforming responses. This interaction demonstrated a shifting by Ss of their perceived relative competence of the group and of themselves. The S's perceived competence increased on similar sex-related items, and consequently conformity occurred less frequently than it did in cases when the sex-relatedness of items was opposite the sex of S and his perceived competence was lower. Perceived competence of the group also varied according to sex-relatedness of the item content. More conformity occurred when the sex of group was the same as the sex-relatedness of the items. The greatest number of conforming responses was given when the relative competence favored the group rather than the S: i.e., when the sex of the S was opposite that of the group and the sex-relatedness of items.

In conclusion, the present research indicates that conformity among American students can be determined according to the relative competence the S perceives in himself and in the group of which he is a member. Further, sex differences need not be a factor in the amount of conformity of the S when appropriate variables, including task content and source of influence, are controlled for in the conforming situation. This lack of sex differences can also be explained in terms of relative competence of the S and the group. Furthermore, when dealing with appropriate sex-related items, a female group is as effective as a male group in producing social pressure to conform to the group consensus.

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MACHIAVELLIANISM AND INGRATIATION*¹

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SUMMARY

The main objective of this paper was to demonstrate the role of the personality variable Machiavellianism and of the situational variable competition vs. noncompetition on the adoption of ingratiation tactics such as paying compliments, other enhancement, and opinion conformity. Thirty-two male undergraduates of a technology institution in India participated in the experiment. Several weeks after the original pretesting on Mach IV scale, high and low mach Ss were assigned to one of the two experimental conditions representing competitive/noncompetitive hypothetical job interview situations. Results clearly support the role of Machiavellianism in adoption of ingratiating behaviors. Those who were high on Mach IV scale scores significantly showed more liking for praising and agreeing with target person in comparison to those who were low on Mach IV scale scores. The situational variable was significant only for opinion conformity.

A. INTRODUCTION

Ingratiation is motivated behavior directed toward the goal of eliciting increased attraction from the other person to obtain a specific benefit (2). Jones (2) in his theoretical analysis suggests that the tendency to ingratiate is a function of the incentive value of gaining attraction, the subjective probability of success, and the perceived legitimacy of particular courses of strategic action. This theoretical formulation has been further supported by Jones and Wortman (4) and more recently by Jones and Baumeister (3). In spite of theoretical formulation of ingratiation, only a few studies have been done to study ingratiation in different situations. The relevance of

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studies on ingratiation specially in a developing country like India with limited resources has been recently emphasized (5, 6).

The main objective of this paper is to demonstrate the role of the personality variable Machiavellianism (1) and of the situational variable competition vs. noncompetition on the adoption of ingratiation tactics, such as paying compliments, other enhancement, and opinion conformity. These ingratiation strategies have been investigated in earlier researches (2, 4). Christie and Geis (1) have shown that relative to low-scorers on the Machiavellianism scale, high-scorers applied themselves with greater zest and originality to deception and manipulation in social situations. It is expected that in a competitive situation individuals will be more motivated to try to win the favor of the target person who controls the reward in comparison to noncompetitive situation. For graduating college students, getting a job is important. In the present experiment it was planned to put Machiavellians in competitive and noncompetitive hypothetical job interview situations and then to measure their responses regarding the behavioral strategies which they adopt. Significant main effects of both variables with adoption of more ingratiation tactics by high Machiavellians than low and by Ss in competitive condition than Ss of noncompetitive condition was expected. In addition, it was expected that both variables would jointly determine ingratiating behaviors.

B. METHOD

1. *Subjects and Design*

Thirty-two males selected from a pretested *S* pool of 100 undergraduates of Indian Institute of Technology, Kanpur participated in the experiment. The design of the experiment was 2×2 factorial with two levels of Machiavellianism (high/low) and two levels of a situational factor involving competitive/noncompetitive hypothetical job interview conditions.

2. *Pretesting and Selection of Ss for Experiment*

Several weeks before the experiment 100 Ss completed Mach IV Scale (1) as a measure of Machiavellianism in classroom situation. The Mach IV Scale has 20 items, and Ss are required to respond on a seven-point scale ranging, from -3 (strongly disagree = 1 score) to +3 (strongly agree = 7 score). The Mach scores could thus range from 20 to 140 with lower scores indicating low Machiavellianism and high scores indicating high Machiavellianism. According to the design, selection of Ss for two levels of

Machiavellianism (high/low) was based on Mach IV scores, yielding two groups with 16 Ss in each group. The two groups, then, were the high Machiavellianism level (Scores range = 87 to 100, $M = 96.50$) and the low Machiavellianism (Scores range = 55 to 79, $M = 66.94$). The high and low Machiavellianism groups differed significantly [$F(1,78) = 144.48$, $p < .001$].

3. Procedure

Several weeks after the original pretesting, Ss were called in the laboratory individually for the experimental session. They were assigned to one of the two experimental conditions randomly representing competitive/noncompetitive hypothetical job interview situations. They were told that, as they approached the completion of their formal academic training, the first vital step in launching their professional career was at hand. Ss were reminded that they faced the challenge of obtaining a job. In this process, they might face a number of personal job interviews. Ss were further instructed to think hypothetically as if they were going to have an interview for a position suitable for their profession and qualification.

In the noncompetitive interview condition Ss were told that the number of applicants who were called for interview was around 20. The personnel director of the company had given indication that around 40 new positions were available for fresh appointment. Thus, Ss were impressed upon by *E* that competition did not exist in this situation.

In the competitive interview condition Ss were told that the number of applicants who were called for interview was around 20. But the indication for new job positions was around 10 only. Ss were impressed upon by *E* that to get a job through this interview was highly competitive.

Ss of both groups were told that in an interview one has to handle oneself intelligently. They were requested to complete a questionnaire in which certain behaviors and approach which one may or may not adopt in interview were described.

4. Dependent Measures

The dependent measures questionnaire included the following four items describing behavior involving ingratiation tactics (2, 4):

1. In the interview, I would like to praise the chairman of the interview board and other members.

2. In the interview, I will make efforts to get frequent opportunities to praise and admire the chairman and members of the board.

3. In interview I will express values, opinions, and attitudes similar to those of the members of the interview board.

4. In interview, I will present myself along the lines of the board members' suggested ideal.

Ss were asked to indicate their responses on a seven-point scale where 7 = strong agreement and 1 = strong disagreement.

C. RESULTS

Responses to each of the four items on the dependent measures questionnaire were subjected to separate 2 (levels of Machiavellianism) \times 2 (competitive/noncompetitive) analysis of variance. The results of these analyses show that, compared to low Machiavellian Ss ($M = 1.25$), high Machiavellian Ss ($M = 3.04$) indicated their liking to significantly praise more the members of interview board [$F(1/28) = 16.16, p < .01$]. The high Machiavellian Ss ($M = 2.81$) compared to the low Machiavellian Ss ($M = 1.50$) showed their intention to make significantly more efforts to get frequent opportunities to praise and admire [$F(1/28) = 12.53, p < .01$] the members. Furthermore, in comparison to low Machiavellian Ss ($M = 3.50$), high Machiavellian ($M = 4.47$) Ss desired to express values, opinions, and attitudes highly similar to those of the members of the interview board [$F(1/28) = 5.07, p < .05$]. High and low Machiavellian Ss did not differ significantly in their responses on the fourth item of the questionnaire. The only significant main effect for the competitive/noncompetitive experimentally manipulated variable was related to the responses measuring expression of values, opinions, and attitudes in conformity with the members of the interview board. Ss in the competitive condition ($M = 4.43$) showed more desire for such conformity than Ss in noncompetitive ($M = 3.54$) condition [$F(1/28) = 6.61, p < .01$]. None of the interaction effects reached significance.

Correlations were computed for each cell of the design, and therefore mean correlations, as well as range of correlations in different cells, are reported.

For item 1, the praising item, relationships of responses with responses to the three other items were as follows: item 2, creating opportunities for praise, $r = .72, p < .01$ (range = .57 to .81); item 3, attitude conformity, $r = .54, p < .01$ (range = .30 to .65); item 4, ideal similarity, no significant correlation in any of the four groups.

For item 2, relationships with other items were as follows: item 3, $r =$

58, $p < .01$ (range = .27 to .83), item 4, no significant correlation in any of the four groups.

For item 3, relationship with item 4 was $r = .54$, $p < .01$ (range = .35 to .67).

D. DISCUSSION

Results clearly supported the role of Machiavellianism in adoption of ingratiating behaviors in a hypothetical situation. Those who were high on Mach IV scale scores significantly showed more liking for praising and agreeing with the target persons in comparison to those who were low on Mach IV scale scores. In addition, high Mach Ss did show liking for efforts to get more opportunities for praising the targets than low Mach Ss. The situational variable manipulated experimentally was significant for only one dependent measure, i.e., opinion, value, and attitudinal conformity. The Ss in competitive condition did show more willingness to demonstrate conformity with the members of the interview board. The joint effects of both variables did not reach significance level. The findings of the study somewhat implicate the role of the personality variable Machiavellianism and situational factor in ingratiating behaviors. However, understanding of such behavior will only improve with more theoretical researches as suggested by Jones (2). Cross-cultural data in a theoretical framework which we lack in this field are needed to explain individual, subcultural, and cultural variations in ingratiation.

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A STRUCTURED DISGUISED TECHNIQUE FOR ASSESSING ATTITUDES AND EGO-INVOLVEMENT*

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SUMMARY

The following hypotheses were tested and confirmed when asked to judge the favorability or unfavorability of 32 intermediate statements on a controversial social issue, extremely prosubjects judged most of these statements as unfavorable, while extremely antisubjects judged most of them as favorable, for both pro- and antisubjects, high ego-involvement was revealed by the small number of statements that were left blank. Two samples of undergraduate Arab students were used (a) Sample 1 consisted of 73 students, in which both sexes, as well as Christians and Muslims, were about equally represented, and of whom 34 Ss judged the statements as applied to a "particularly liked" group and the remaining 39 Ss judged the same statements as applied to a "particularly disliked" group; (b) Sample 2 consisted of another 30 students, 15 of whom were Christian Lebanese, 11 males and 4 females, known to be extremely anti-Palestinian, while the other 15 (9 males and 6 females, 4 Christians and 11 Muslims) were known to be extremely pro-Palestinian, all of whom judged the same statements with respect to Palestinian Commandos in Lebanon.

A. INTRODUCTION

Proceeding from findings and general principles in the psychology of human judgment, Sherif and his colleagues developed the social judgment-involvement approach to attitude measurement and change (4, 5, 6, 7, 8, 9). Within the framework of this approach, the "own categories" procedure was developed as an indirect or disguised technique for the assessment of attitudes and ego-involvement. According to this procedure, the S is presented with an objective task in judgment in which he is instructed to sort

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a number of statements on a controversial social issue into any number of piles or categories he chooses, so that the different categories contain statements that "belong together" and so that the categories represent gradations on a continuum of favorableness-unfavorableness toward the issue in question. Thus, on the basis of experimental evidence utilizing the own categories procedure, Sherif *et al.* (4, 8) showed that, on a controversial social issue, highly involved *Ss* tended to use *fewer* categories and also to make *unequal* use of these categories in comparison with less involved *Ss*.

Other evidence in the literature, however, is not fully consistent with the above findings. For example, Upshaw (10) found grounds for disputing the validity of the experimental procedure for judges with an unfavorable stand, and Zavalloni and Cook did not find support for the prediction that "subjects unfavorable to the group will displace items toward the favorable end of the scale" (11, p. 51). Similarly, in a more recent study by Makdah and Diab (2), neither attitude nor degree of ego-involvement was found to produce significant differences in the number of categories used.

While different explanations have been offered elsewhere (e.g., 2) to account for inconsistencies in the above findings, the main concern here is with possible methodological pitfalls in utilizing the own categories procedure which could have also contributed to these inconsistencies. While, as Sherif and Sherif correctly pointed out, "... the own categories procedure suggests itself as an indirect or disguised method for attitude and personality assessment" (8, p. 127); yet the mere fact that this method is applied to *Ss* in individual sessions may affect the task of categorizing stimuli in unknown ways. As suggested by Makdah and Diab (2), a possibly important contributing factor here could be whether a pro- or an antistand on the issue is socially acceptable. Thus, an *S* tested individually through the use of the own categories procedure may, in spite of being asked to categorize the relevant stimuli objectively, be affected by the *E* variable and by lack of anonymity. Such an effect would be particularly potent for those *Ss* whose stands, whether pro or anti, are not in line with what is generally considered to be socially acceptable.

As one proceeds from the same logic on which the own categories procedure is based and attempts to minimize the effects of the *E* variable and to obtain information from large groups of *Ss* at a time, the "item-displacement procedure" is suggested as a structured-disguised technique for the assessment of an individual's attitude and degree of ego-involvement on a controversial social issue. According to this procedure,

the *S* is also presented with an objective task in judgment in which he is instructed to judge the favorability or unfavorability of each of a number of intermediate statements on a controversial social issue, leaving blank any statements which cannot be judged as either clearly unfavorable or clearly favorable to the issue in question. Thus, this procedure yields three related numerical measures: namely, the number of statements judged as favorable or unfavorable or otherwise left blank by the *S*.

The purpose of the present paper is to validate the item-displacement procedure for further use in social-psychological research by testing the following hypotheses:

1. Extremely prosubjects will displace significantly more items into the Unfavorable than in the Favorable category.
2. Extremely antisubjects will displace significantly more items in the Favorable than in the Unfavorable category.
3. Extremely pro- as well as extremely antisubjects will remain non-committed on a relatively small number of items.

B. METHOD

1. Subjects

The first sample of *Ss*, referred to hereafter as Sample 1, consisted of 73 out of a total of 82 undergraduate Arab students enrolled in two sections of the introductory psychology course at the American University of Beirut. From previous information available on student enrollment in these two sections, it is known that the students consist of about an equal number of males and females and also of an equal number of Christians and Muslims. Furthermore, it was also known that slightly more than three-fourths of the students in both sections were Lebanese Arabs, while the remaining one-fourth consisted mainly of other Arabs.

The second sample, referred to as Sample 2, consisted of 30 *Ss*, of whom 15 were Christian Lebanese (11 males and 4 females) known to be extremely anti-Palestinian and the other 15 were Palestinians (9 males and 6 females: 11 Muslims and 4 Christians) known to be extremely pro-Palestinian.

2. Materials Used

Thirty-two statements expressing different attitudes toward defined groups were selected from the Grice-Remmers Generalized Attitude Scale, Forms A and B (3), with most of them being slightly modified to render

them more intermediate rather than extreme in nature, and consequently more subject to systematic displacements (1, 4). These 32 statements constituted the stimulus material used in the judgment task for Sample 1 utilizing the item-displacement procedure, examples of which are the following: "They deserve some consideration from the rest of the world," "They have some undesirable traits," "They are sometimes considerate of others," "They have a slight tendency to fight," "They are sometimes sly and deceitful," and "Some of them should be deported from my country."

The stimulus material used for Sample 2 consisted of the same 32 statements except that the terms "they" and "them" were replaced by the terms "Palestinian Commandos." Thus, the above statements became "Palestinian commandos deserve some consideration from the rest of the world," "Palestinian commandos have some undesirable traits," and so on.

3. Procedure

All Ss in Sample 1 were tested in their regular classroom sessions. To one section, consisting of 34 Ss, referred to as "extremely prosubjects," instructions asked each *S* to think of a *group of people* that actually exists in his country and that he *particularly likes*, to specify the name of this group by writing it down, and then to judge each of the 32 statements with respect to favorability or unfavorability to the group in question, leaving blank any statements that cannot be judged as clearly unfavorable or clearly favorable.

These instructions were followed on the same page by a listing of the 32 statements. No background or personal information was solicited from the *S*.

The above procedure was exactly duplicated in the second section consisting of 39 Ss, referred to as "extremely antisubjects," except for one change introduced in the instructions: namely, the *S* was asked to think of a group of people which he *particularly dislikes*. Otherwise, the same set of instructions and statements were administered to the Ss in both sections. All Ss responded under complete anonymity and the testing time was not more than about 15 minutes.

For the extremely prosubjects, about one-half of the Ss mentioned as "particularly liked" political and/or religious groups, and about one-third mentioned social groups. For the extremely antisubjects, about two-thirds of them mentioned as "particularly disliked" political and/or religious groupings.

The procedure for Ss in Sample 2 was identical with that in Sample 1

except that in the "instructions" to the *S* (a) the group was specified as "Palestinian commandos in Lebanon" and (b) the testing was carried out in groups of 4 or 5 *Ss* or in individual sessions.

C. RESULTS

For both Samples 1 and 2, the measures used for testing the hypotheses were the total number of items or statements, out of the 32 statements presented, which were judged either as Unfavorable or as Favorable or otherwise left blank by the *Ss*.

Extremely prosubjects in Sample 1 judged an average of 14.2 items as Unfavorable and 11.2 items as Favorable, with a mean difference of +3.0, which yields a *t* value of 10.108, significant beyond the .0005 level, and thus supporting the first hypothesis. For extremely pro-Palestinian *Ss* in Sample 2, there was a mean difference of +5.0, yielding a *t* value of 4.1, significant beyond the .005 level, again supporting the first hypothesis.

Extremely antisubjects in Sample 1 judged an average of 10.0 items as Unfavorable and 16.3 items as Favorable, with a mean difference of -6.3, which yields a *t* value of 5.9, significant beyond the .0005 level, in line with the second hypothesis. For extremely anti-Palestinian *Ss* in Sample 2, there was a mean difference of -6.4, yielding a *t* value of 4.1, significant beyond the .005 level, again supporting the second hypothesis.

Extremely pro- and extremely antisubjects in Sample 1 remained non-committed on an average of 6.529 and 5.667 items, respectively, while they judged as Favorable or Unfavorable an average of 25.5 and 26.3 items, respectively. The *t* values obtained for the pro- and the antisubjects were 13.2 and 12.1, respectively, both significant beyond the .0005 level, thus supporting the third hypothesis. For Sample 2, extremely pro- and extremely anti-Palestinian *Ss* remained noncommitted on an average of 3.0 and 4.4 items, respectively, while they judged as Favorable or Unfavorable an average of 29.0 and 27.6 items, respectively. The *t* values obtained for the pro- and anti-Palestinian *Ss* were 16.7 and 19.0, respectively, both significant beyond the .0005 level, again supporting the third hypothesis.

D. DISCUSSION

The results obtained in this study supported the generalization that *Ss* with favorable and unfavorable attitudes placed a disproportionately large number of items in the category opposed to their own stand on the issue.

On the basis of the item-displacement procedure, high ego-involvement is indicated by the relatively small number of items on which the *S* remains

noncommitted, and extreme positive or negative attitudes are indicated by the relatively large number of items judged, respectively, as "Unfavorable" or "Favorable" by the S.

The item-displacement procedure maintains the advantages of the own categories procedure in being disguised, structured, and appropriate for cross-cultural research, and it also has the additional advantages of enabling the researcher to collect data on large numbers of Ss and to do so by minimizing possible artifacts produced by the research situation.

Pending further validation of the item-displacement procedure on additional known criterion groups, this method can be applied in various organizational or institutional settings to provide indirect measures of extremity of attitude, direction of attitude, and degree of commitment or group loyalty.

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THE IMPACT OF FALSE AROUSAL FEEDBACK ON INTERPERSONAL ATTRACTION*

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SUMMARY

A Valins-type false-feedback procedure was utilized in presenting Ss with visual GSR feedback indicating either high-arousal or low-arousal responses to attitude statements of depicted others. A 2 (sex of S) by 2 (agreeing vs. disagreeing condition) by 2 (high-arousal feedback vs. low-arousal feedback) factorial design was employed with a total of 80 male and female undergraduates. The agreement by arousal feedback interaction was significant [$F(1, 76) = 7.10, p < .01$] with attraction increasing in the agreeing condition and decreasing in the disagreeing condition concomitant with feedback indicating high level of arousal. The findings were discussed as partially supportive of the reinforcement-affect model of interpersonal attraction.

A. INTRODUCTION

The association between feeling and liking has been a guide to a considerable amount of research in the area of interpersonal attraction. Clore and Byrne (5) have adopted a theoretical approach in which liking is assumed to be mediated by feelings. They propose that we like those things or people that make us feel good (or are associated with things that make us feel good) and dislike those things or people that make us feel bad (or are associated with things that make us feel bad). This proposition has received considerable empirical support (8, 9, 10, 15) with various investigations showing that an individual's internal emotional state, or at least an individual's self-reported emotional state, is positively related to his evaluations of other people.

Additionally, these propositions have been supported in studies which have recorded actual physiological responses to attitudinal stimuli. Using skin

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¹ This study is based in part on a Master's thesis completed by the first author at Bowling Green State University. Requests for reprints should be directed to the second author at the address shown at the end of this article.

conductance as a measure of arousal, a number of investigators have found negative stimuli, such as dissimilar attitudes and negative evaluations to be more arousing than positive stimuli, such as similar attitudes and positive evaluations (6, 7, 14). These results are congruent with the finding that *Ss* report being more aroused by dissimilar than by similar statements (2, 3) and led to Clore and Byrne's (5) demonstration that a strong relationship exists between attraction toward an agreeer and arousal and between dislike toward a disagreeer and arousal. Thus, the consistency with which attitudinal stimuli have been shown to influence affective responses and experimentally induced affective states to influence attraction suggests that the strength of the affect (positive or negative) has a highly significant influence on interpersonal attraction responses.

It seems possible, therefore, that if an individual's perception of the strength of his internal emotional state could be led astray, then subsequent evaluations of associated others should also be influenced. If, for example, an individual were led to believe that his emotional state was more positive than it actually was, more positive interpersonal evaluations should follow, or if he were led to believe that the strength of his negative feelings was greater than it actually was, then more negative interpersonal evaluations should follow. Valins' false-feedback technique provides a method to test this contention (12, 13).

On the assumption that nonveridical representations of arousal do, in fact, have the same effect as veridical arousal, an interactive effect of similarity-dissimilarity and feedback information indicating one's arousal level on attraction was predicted. More specifically, an increase in attraction for similar others and a decrease in attraction for dissimilar others with feedback indicating high level of arousal was predicted.

This hypothesis was therefore tested by providing *Ss* with false-feedback information of their arousal level while they viewed attitude statements presumably of associated others. Simulated GSR was used in providing differential false feedback to *Ss*.

B. METHOD

1. Subjects

The *Ss* were 40 female and 40 male introductory psychology students whose participation in this experiment served as partial fulfillment of a two-hour lab requirement. They had been pretested earlier in the term on a 40-item attitude questionnaire (1), so that attitude similarity could be manipulated in the present study.

2. *Materials and Procedure*

The experimental room contained a chair in the center of the room directly facing a projection screen. Set at an angle just to the left of the screen was a metal instrumentation rack containing two panels and a shelf. On the facing of the top panel appeared a red indicator light and a simple voltmeter with a label below it reading "GSR" and used as a feedback device. Nonfunctional knobs were used to provide a balanced appearance. The middle panel was a mounted Fels model 22A dermohmmeter used only to increase the "face validity" of the entire rack as an apparatus actually capable of recording physiological responses. The dermohmmeter contained an Esterline Angus Recti-Graph recorder which also served to provide feedback.

Attitude statements were presented via a carousel projector. After informed voluntary participation for the study was obtained and the *S* was seated in the experimental chair, the *E* played a prerecorded instructional tape while attaching two electrodes on the palm of the *Ss'* left hand. The tape explained the instrumentation on the rack and went on to provide a brief explanation of the use of the galvanic skin response as a measure of physiological arousal. *Ss* were told that the GSR dial and the needle movement over the paper tape would provide feedback regarding their level of arousal. They were further instructed that the red indicator light was set to illuminate only if a strong level of GSR was recorded and would remain off if that level was not reached. Finally, they were instructed that their GSR would be recorded while they viewed the responses to an attitude questionnaire made by an *S* in a previous experiment, as well as while viewing a preliminary series of slides.²

3. *Feedback Manipulation*

Ss were given one of two feedback responses for each slide: low-arousal feedback (LAF), which involved very slight deflections of the GSR dial and printout needle but not enough to illuminate the indicator light, or high-arousal feedback (HAF), which involved extreme deflections of the GSR dial and printout needle along with the illumination of the indicator light.

Upon completion of the instructional tape, the *E* answered any questions and then proceeded with the preliminary series of slides "in order to acquaint the *S* with the experimental task." In actuality, this initial procedure served to lend credibility to the measuring instruments and to strengthen the validity of

² The preliminary series of slides consisted of receiving low-arousal feedback (LAF) for six nonarousing slides (four landscape scenes, a storefront, and the word "tent") and high-arousal feedback (HAF) for six arousing slides (three heterosexual scenes, two victims of car accidents, and an obscene four letter word). All slides were pretested for arousal value and presented in a fixed random-order sequence.

the indicator light, the GSR dial, and the needle movement as true indicators of physiological (i. e., GSR) response.

Following the initial procedure, Ss were presented a series of 12 attitude statements alleged to be the responses of another S to a previously administered attitude questionnaire. In actuality, attitude similarity was manipulated by the constant discrepancy "unique stranger" method in order to simulate a similar or dissimilar stranger (1). This method involves utilizing S's own attitudinal responses to construct the attitudes of the stranger, where a similar attitude is defined as being 1 scale value away and on the same side of neutral as the S's, and a dissimilar attitude is constructed to be 3 scale values away and on the opposite side of neutral as the S's. Within the high-arousal feedback conditions, Ss viewing the attitudes of a similar stranger received HAF for the nine similar attitudes and LAF for the three dissimilar attitudes. Ss viewing the attitudes of a dissimilar stranger received HAF for the nine dissimilar attitudes and LAF for the three similar attitudes. Within the low-arousal feedback conditions, Ss received LAF for all the attitude statements associated with either a similar or dissimilar stranger.

Each S was thoroughly debriefed at the end of each experimental session regarding the nature of the study and all deception used. Prior to debriefing, they were screened regarding suspicions that deception was used. Only two Ss reported believing that they had been deceived. These two Ss' as well as three Ss for whom the experiment was not completed due to mechanical equipment failure, were replaced.

4. *Coordination of Feedback*

The slide presentation was automated with the 12 slides projected for 15 seconds each with 15-second intervals between them. Coordinated with the slide sequence through a relay box were controls for the indicator light, GSR dial, and printout needle. Three seconds after each slide projection, the dial and needle either jumped markedly (HAF) or jumped only slightly (LAF), and the indicator light either illuminated (HAF) or remained unlit (LAF) in conjunction with the dial and needle movements. While the dial and needle simply jumped and immediately returned to resting position, the indicator light remained lit (i. e., in the HAF condition) through the remaining 12 seconds of the slide projection. This allowed the Ss sufficient time to read through the attitude statement and be fully aware of the response feedback. This is the same feedback system that was used during the preliminary series of 12 slides.

5. *Dependent Measures*

At the completion of the presentation of the attitude statements, a measure of attraction for the person associated with the attitudes and a self-report measure of affect was obtained from all Ss. Attraction was measured by averaging the Interpersonal Judgment Scale (IJS (1)) and, as a self-report measure of affect, a feelings scale was used [see Griffith (9)].

C. RESULTS

A 2 (sex of S) \times 2 (.75 similar vs. .25 similar) \times 2 (high-arousal feedback vs. low-arousal feedback) analysis of variance was performed on the summed measure of attraction, as well as on each of the six individual items of the IJS. Similar analyses were performed on each item of the feelings scale in addition to the summed measure of affect.

1. *Attraction*

The analyses indicated no significant sex differences on any of the variables of the IJS except "knowledge of current events" [$F(1, 72) = 5.17, p < .025$]. The design was thus collapsed across sex with all variables except "knowledge of current events" subjected to separate 2 (attitude similarity) \times 2 (arousal feedback) analyses of variance.

A significant main effect for proportion of similar attitudes was found on the attraction measure, as well as on five of the six IJS items. Attraction was much greater for similar strangers than for dissimilar strangers [$F(1, 76) = 76.38, p < .0001$]. Similar strangers in comparison to dissimilar strangers were rated as more likeable [$F(1, 76) = 55.97, p < .0001$] and as more desirable work partners [$F(1, 76) = 57.39, p < .0001$]. They were also found to be more intelligent [$F(1, 76) = 19.48, p < .001$], more knowledgeable of current events [$F(1, 76) = 11.27, p < .002$], and better adjusted [$F(1, 76) = 18.91, p < .001$]. There were no other main effects.

With regard to the primary hypothesis of this study, an interaction effect on attraction was predicted between proportion of similarity and feedback information, indicating one's level of arousal. Furthermore, it was predicted that high arousal feedback would act to increase attraction for similar others and decrease attraction for dissimilar others. The predicted similarity \times arousal feedback interaction was significant [$F(1, 76) = 7.10, p < .01$]. Inspection of the means revealed that the effect of high arousal feedback relative to low arousal feedback was to increase attraction for similar others and to decrease attraction for dissimilar others (see Table 1).

TABLE 1
MEAN ATTRACTION AND AFFECT RESPONSES AS A FUNCTION OF SIMILARITY AND AROUSAL
FEEDBACK

Similarity	Attraction	Arousal feedback		Affect
		High	Low	
.75 similar	10.95	10.05	31.30	26.90
.25 similar	6.35	7.60	28.50	29.80

Note. The larger the number the greater the attraction and the more positive the reported affect.

2. Affect

No significant main effects were found on any of the variables of the feelings scale. A significant interaction effect was found, however, on the summed measure of affect between proportion of similarity and arousal feedback [$F(1, 72) = p < .012$]. Again, high arousal feedback relative to low arousal feedback increased the positivity of the self-reported affect in the similar condition, while it decreased the positivity of the reported affect in the dissimilar condition (see Table 1).

D. DISCUSSION

Consistent with previous research in attraction (1), the results of this study indicated that *Ss* were more attracted to attitudinally similar than to attitudinally dissimilar strangers. Attitude similarity was also found to influence three of the four buffer evaluative items which they were asked to make. Similar strangers were rated as being more intelligent, more knowledgeable of current events, and better adjusted than dissimilar strangers.

The principal finding of the study was the predicted interactive effect of attitude similarity and level of arousal feedback on attraction. *Ss* reported being less attracted to a dissimilar stranger when in the high-arousal feedback condition than when in the low arousal feedback condition. This finding that false feedback of greater arousal intensified dislike toward disagreeers is consistent with findings of previous research using self-report measures of arousal (2, 11), as well as actual physiological responses (6).

The use of false feedback in attempting to manipulate perception of *Ss'* arousal levels clearly distinguishes the present study from previous investigations in attraction which have directly manipulated *Ss'* affective states (8, 9, 10, 15). And it is of significance that comparable changes in attraction responses were obtained. It would thus appear that providing *Ss* information

relative to their arousal level has a similar effect on attraction responses as does direct manipulation of affective states.

In an attempt to obtain an independent measure of affective state, a self-report feelings scale was used. The analysis of variance results indicated that, while the arousal manipulation produced differences in reported affect in the predicted direction, in both the high-arousal feedback condition and the low-arousal feedback condition, self-reports of affect after viewing the attitudes of a dissimilar stranger were much more positive than expected. It appears that Ss reported positive affect scores independent of similarity conditions.

One explanation for this latter finding involves the nature of the response measure and the time it was administered. Byrne, Rasche, and Kelley (4) note that while attraction responses are influenced by both information and affect, more "purely" affect responses, such as self-report of feelings, may have a greater affective than informational influence. Veitch (14) has found that the magnitude of self-reported affect is associated with actual arousal at the time the report is made. As arousal dissipates over time, self-reports of feelings become less polarized. Since in the present study the affect measure was administered after the attraction measure, an order effect or a "time effect" allowing for dissipation of arousal may partially explain the results.

In conclusion, the increase in positivity of IJS responses with high-arousal feedback for similar attitude statements and the decrease in the positivity of the IJS responses with high-arousal feedback for dissimilar attitudes clearly supports the prediction based on the reinforcement-affect model. Only marginal support was obtained, however, for the presumed underlying mechanism which was operating—i. e., associated affect.

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A REASSESSMENT OF THE FACTORIAL CULTURAL DIMENSIONS OF MODERN NATIONS¹

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SUMMARY

This research aims to repeat for the year 1970, and with improvements, the factorial analyses for earlier years made by Cattell, Rummel, Sawyer, and others to determine the dimensions of nations. Taking initially 120 nations and 82 variables covering social, economic, educational, and psychological behavioral indices, the investigation found 24 factors statistically required, though only 21 were clear enough for interpretation. The factoring, tested for factor number by the scree test, and iterated to communalities for that number, was rotated until an unimprovable maximum hyperplane count reached unique oblique simple structure.

Although the full testing of congruences with earlier patterns has been allotted to a further article, it is already evident from inspection that the larger patterns (e. g., of vigorous development, intelligent affluence, size, cultural pressure, etc.) found in the studies on data of 1936, 1960, etc., as dimensions of nations, still hold up in the latest period and with the increased roster of nations.

A. INTRODUCTION

In the concern of social psychology to relate personality to culture patterns it is necessary to have dimensions of *both* of the "organisms." Fortunately, the source traits expressing ability, personality, and dynamic structure in individuals have long been the subject of multivariate experiment and led to stable concepts. But factor analyses to reveal the dimensions of syntality for groups did not begin until around 1950, first on nations as units (2, 3, 15) and

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secondly on small 10-man neonate groups (16). Since then, experience with the method and evidence of increasing consistency of the results have accumulated in the studies of Gibb (18), Cattell and Adelson (10), Sawyer (26), Russett (25), Wilkenfeld *et al.* (29) and especially Rummel (23, 24). The various studies have used as group entities mainly nations, but also tribes, states of the Union (19), and cities (27).

Methodologically, it would seem that provided (a) a uniform species of group is taken, (b) that each group is possessed of an obviously persisting organic structure, and (c) that the groups have appreciable independence (e. g., do not overlap on population with others) dimensions can be found that have reasonable constancy of pattern and functional meaning.

The present study concerns the dimensions of nations—120 of them—existing today. In the few studies yet published a substantial difference of emphasis has appeared between the psychologist, as in the Adelson, Breul, Cattell, Gibb, and Hartman studies just mentioned and the political scientist, as in the work of Rummel, Russell, Sawyer, and Wilkenfeld. The former investigate variables having more relevance to clinical psychology, education, scientific productivity, domestic patterns, religions, etc., and the latter take variables more to do with foreign policy, trade, etc. However, through interaction in method and aim, Cattell in the former group, and Rummel in the latter, have designed enough variables in common to permit integration. This applies to ordinary variables not to the special dyadic variables used by Rummel in national interactions, which invoke a quite distinct methodology.

The present research proceeds on the assumption that we do not yet have sufficiently clear dimensions to restrict variables to particular "markers," and that we still need to enter with as broad a range of variables as possible, in an hypothesis-creating use of factor analysis. This is not "atheoretical," but recognizes that many more lawful relations need to be established than the few yet known to history and political science, before potent theory can be developed. Moreover, it is useful to reproduce *exactly* most of the variables in the pioneer studies in order to be able to set up the hypotheses there generated, for re-testing.

It aims, in brief, (a) To reach a unique factor analytic resolution of a wide array (82 variables) overlapping considerably with those of the studies 25 years ago, and Rummel's more recent studies, on all modern nations for which data can be obtained, on the hypothesis that there will be recognizable continuity of the pattern of dimensions, along with some developmental change; (b) To extend to new variables chosen to test inferences from the hypothesis generated in the first work; and (c) To examine the agreement by

congruence and *salient variable similarity indices* (17), (d) To offer dynamic interpretations of the best confirmed patterns, (e) To use pattern similarity coefficients in the taxonomic computer program to group nations in species [or "civilizations" as Toynbee (28) defined them]; (f) To investigate relations of culture patterns to personality characters in the population, as in the work of LYNN (21), Jonassen and Peres (19), and others. Only (a) and (b)—the statement of dimensions found—can be covered in the present article. An associated article (30) covers (c), while (d), (e), and (f) are covered in other articles (9, 14).

B. METHOD

1. *The Data*

The persisting problem in this domain of research has been to obtain data on variables that are (a) maximally relevant to the hypothesized factorial dimensions, and (b) available as data for enough countries to permit correlations to be determined on an adequate sample. The problem in (a) is illustrated by wishing, for example, to obtain number of alcoholics per 100,000 and being able to obtain only counts of cirrhosis of the liver recorded in hospitals, or needing to obtain number of murders per 100,000 and finding that varieties of manslaughter are differently classified in different countries. The problem in (b) we met by dropping out from our original list of 120 countries, 20 on which data were generally thin, and then using on the remainder a correlations program for incomplete data as described elsewhere (7). This involves a check that a non-Gramian correlation matrix does not accidentally get produced by the different sample sizes in the same R matrix.

On theoretical grounds Cattell (2, 4, 5) has suggested recognizing three types of variables: (a) population variables, giving mean values on intelligence, years of schooling, income, etc., characterizing the average person, (b) syntality variables which refer only to actions of the group government as an organized group—e.g., in promulgating laws or dealing with other groups—and (c) internal structural variables, defining classes, roles, traditions, etc. The question arises whether they should be factored separately or together. Adopting the hypothesis that all are interrelated—and, for that matter—that economic, political, social, educational, and clinical psychological variables are illuminatingly interrelated, we decided first to factor all together, but to proceed later, in the light of indications, to factorings of the three separate panels.

Similarly with regard to the "subjects"—the list of nations—we decided

initially to factor all together. Later, on the basis of the natural groupings revealed by the taxonomic program, we proposed to factor for sharper definition of factors within more uniform groups: e. g., separately for developed and undeveloped countries.

The domains that the variables are aimed to cover in order to represent *syntality*, *population*, and *structure* are as follows:

1. Occupations and modes of subsistence, 2. Social structures, 3. Political systems, 4. Administrative agencies, 5. Demography, including race, 6. Religious and moral values, 7. Legal systems, 8. Economic parameters, 9. Economic customs, 10. Dwelling and living conditions, 11. Nature of technology and science, 12. Education system, 13. Recreation, 14. Sex, sex status, and marriage customs, 15. Cultural productivity and activity, 16. Communications, 17. Transportation, 18. Adjustment and psychological characteristics of individual citizens *per se*, 19. Health-medical, nutritional parameters of population, 20. Geography, climate, and natural resources, 21. Military defense organization, 22. Historical factors and traditions with persisting effects, 23. Degree of internal domestic conflict, 24. Foreign interactions, 25. Participation in international organizations.

The list of survivors of an original list of 160 variables finally proving capable of being measured for a sufficiency of countries is shown, with sources, in the Appendix to this article, in the order in which they appear in subsequent factor tables.

As in any strategically designed factor analytic experiment in a programmatic research plan, this study included, as stated in our aims, a sufficiency of *marker variables* for factors found in the past, with special reference to the earlier analyses of Cattell and of Rummel. Rummel, as mentioned, included decidedly more national interaction variables in his conception of syntality expression, arising from his interest in international politics and dyadic relations. The present list is a compromise of the two emphases.

In the interests of factor analytic design it was hoped that the number of countries would decidedly exceed the number of variables, but in the end it did so only by 20. Earlier experiment with varying person-variable differences showed this in the range of stability of solution. The 100 countries finally included are given in a list deposited with NAPS with the larger tables with a recall reference as given below.

It will be noted that most population variables in the list in the Appendix here are expressed as a quotient: e. g., as Nobel prizes per 100,000. If this were not done the size factor would spread over virtually all variables.

2. *The Analysis*²

Before using the product-moment coefficient to establish the main R matrix in an area such as this, one naturally ponders the possible need to rescale such variables as show odd distributions of raw scores. Since we hoped to proceed later to factor scores, where the true deviation of certain nations would need to be respected, we decided against normalizing or other rescaling, though this may have generated one or two "difficulty factors" (7) and led to our having later to discard some debris.

The principal axis factor analysis was done on the product-moment correlation matrix, among the 82 variables. The scree test indicated 24 factors, and communalities were iterated to fit that number. The matrix was then rotated by the Harris-Kaiser oblique program and shifted from that position by Rotoplot with the aim of reducing interfactor correlations and reaching a maximum overall $\pm .10$ hyperplane count, the latter having priority. After nine overall rotations, plotting successive counts, a plateau was reached at 66% in the hyperplane when communality-corrected. Not only was this unimprovable by further trial and error, but it exceeded a $p < .01$ significance. [The Bargmann significance tables (7) show 61% in the hyperplane with 82 variables and 24 factors significant at $p < .01$ level.]

C. RESULTS

An initial interpretation of the factors will now be made, by considering those variables that load highly upon them (positively and negatively), those that fail to load, and those that simultaneously load on other factors. The interpretations will be related to past factorings, by title, and it should be noted that this factor pattern matrix has had its original "chance" order of factors reordered to keep to an order most common to the previous researches. Apart from such indications it simply keeps them roughly in declining order of size. The congruence coefficient comparisons of these factors with factors found in previous studies, as well as the presentation of factor correlations and examination of higher order factors are given elsewhere (30), as indicated above.

² To facilitate further or alternative analyses by others the list of countries, the R matrix, the unrotated factor matrix, V_0 , and the transformation matrix, L , to the final position here have been deposited with NAPS and the final resolution thus reached is set out as a factor pattern matrix in the NAPS material. Please order Document No. 03433 from ASIS NAPS c/o Microfiche Publications, Box 3513, Grand Central Station, New York 10017. Remit in advance \$3.00 for microfiche and \$5.00 for photocopies. Outside of the U.S.A. and Canada, postage is \$1.00 for a fiche and \$3.00 for a photocopy.

With 24 factors to describe, the exposition here will be brief except for the first nine [well confirmed elsewhere (30)], for which a little more theoretical discussion may be given.

Syntality Dimension 1 Vigorous Adapted Development vs. Underdeveloped Resources. This is marked there and elsewhere by high industrialization, restriction of birth rate, high consumption and output. The variables involved are: Low ratio agriculture to total workers, Many calories per day per capita, High Gross National Product per capita, Many telephones per capita, Many active in tertiary occupations, Much air travel per capita, High Nordid race % in population, Many automobiles per capita, Low gross birth rate, High percent workers in utilities and communication transfer, High energy consumption per capita, High % employed in industry. It separates especially what are commonly called underdeveloped from developed countries, and a score summed across the chief variables would provide an index of the extent to which adaptive, organized use of resources has proceeded in the light of available technical knowledge.

Syntality Dimension 2 Intelligent Affluence. Previous Studies (30) have shown what at first may seem a peculiarly close association within one factor of *educational level* and *general affluence*. In regard to the latter there is also some cooperativeness (in the technical factorial sense) with dimension 1 above in that both load gross national product, energy consumption, and prevalence of tertiary occupations. The variables most involved are High Gross National Product per capita, High domestic mail per capita, High Nobel prizes in science per 100,000, High proportion Nordid race in population, High age of institutions, Many automobiles per capita, Much affiliation to international organizations, Many telephones per capita, Many treaties as multilateral alliances, Low ratio agriculture to total workers, Much air travel per capita, Much energy consumption per capita, Many mental hospital beds per capita, Much freedom of press from censorship. As the factor pattern (deposited at NAPS) shows,² however, there are several educational loadings, at a lower level, such as numbers in teaching and school standards. Since loadings on educational expenditures, etc., though falling chiefly here, are low, our earlier hypothesis that education brought affluence must be abandoned—without, however, accepting the converse. Instead our hypothesis is that this represents the intelligence and controlled inhibition levels of the populations. Although at present this may seem far-fetched—and unprovable until culture fair intelligence test surveys are made—the recent studies of Lynn (21) showing, by districts, significant correlation of intelligence with earnings, gives some support to interpretation as population intelligence.

Syntality Dimension 3. Simple Life Morality vs. Anomie-Anomie. The general morality and morale factor found by Cattell, Breul, and Hartman (8) and confirmed by Cattell and Gorsuch (11) was specifically concerned with low murder, drunkenness, and venereal disease rates, with typhoid fever rates appearing as a sign of low effort regarding community health conscience. The variables, from the top downward, in the present factor pattern are as follows: Low % economically employed in industry, Few calories per day per capita, Few cancer deaths per capita, High agricultural to total workers, Low Noddy race in population, Many people per dwelling, Few deaths by heart disease per capita, Little affiliation with international organizations, Few treaties as multilateral alliances, Low age of institutions, Low gross death rate, Few automobiles per capita, Large number of language groups, Low energy consumption per capita, Little domestic mail per capita, Few mental hospital beds per capita, Few deaths by hypertension.

Surprisingly the chief earlier indicators are almost submerged in the present pattern in indicators presenting a simple agricultural life, a low death rate generally, and notably low rates on heart disease and hypertension. The explanation which at present suggests itself is that extending our sample from roughly 50 to roughly 100 countries—most of the increase being in "undeveloped" countries—has brought a change in the pattern as often occurs when samples are "biased" in factor analysis. The theory would now have to be that we deal here with a high mutual control of behavior which occurs in village life, and which is lost in what Tarde described as the "anomie" of anonymous city life. The writings of Rousseau repeatedly describe this kind of rustic virtue, and perhaps indeed there is at the present time lower crime and higher scores on the morality indicators in the "simple life" cultural pattern. However, this noticeable transformation of the pattern when more less-developed countries are added is disturbing and calls for further research checks.

Syntality Dimension 4. Size. This has markers of a large area and large population previously found characterizing a size factor. It now adds to the old meaning a tendency to more numerous ministries, a national expansionism (presumably an imperialism), and more frequent involvement in war, whereas 50 years ago it brought more signs of poor internal coordination. That larger countries should tend to spread their political control requires no explanation. Size is revealed both as a dangerous responsibility requiring extra efforts to maintain integration, and an opportunity to grow still more by the pressures that can be exerted. The top marker variables are as follows: Large area, Large coal reserves, Many specific government ministries, Much involvement in war, Much urbanization, Much expansion of area politically

controlled, Large population size, Much motion picture attendance per capita, Little freedom of press from censorship.

Syntality Dimension 5. Careless, Unintegrated Society. It is hard to find a suitable title for this dimension, which so far is not confirmed. The low heart and cancer disease deaths and high typhoid suggest a society with short life expectation and poor community health care. At the same time the low suicide suggests a low psychological complexity and a certain carefreeness. The markers are the following: Few deaths by heart disease, Few deaths by cancer, Few deaths by suicide, Many deaths by typhoid fever, Few Nobel prizes in Science per 10,000, Many people per dwelling, High gross birth rate, Few employed in industry, High proportion Mongolians in population, Few mental hospital beds.

Syntality Dimension 6. Cultural Pressure: Expressed in Intolerance of Burden. This is a factor of considerable psychological interest, having been found several times before, always with high urbanization, high intellectual activity, marked aggression (expressed in riots and wars), and much international interaction. Because of special theories about it (6), the highest variables are listed here all the way down to the fifteenth: High total government receipts for income tax, High relative eminence in field of music, Many riots, Large iron ore production, High urbanization; cities over 100,000, Many representatives at United Nations organization, Many strikes and industrial disputes, Large government expenditure on arms per capita, High ratio female to male students, Much air travel per capita, Many automobiles per capita, High Gross National Product per capita, Many telephones in use per capita, Greater age of institutions, More deaths by heart disease per capita.

Cultural pressure, as a national culture dimension, has had, in previous analyses (6, 15, 30) three aspects: (a) Urbanization and complexity of occupation, (b) Evidence of frustration and aggression, in riots, wars, suicides, and (c) High cultural output. In the present analysis, probably because we have more variables and more countries, it is as if a second factor in this area, previously mixed with this, has been revealed as a separate determiner, shown in Syntality dimension 8 below.

Although the present pattern is partly involved with contributions to intellectual culture—e. g., to music and to more higher education for women, its main emphasis is on urbanization, a burden of taxes, riots, war, and threats of war (expenditure on armaments), and industrial unrest. Our theory accordingly considers this first pattern to represent the reaction of inability to tolerate the burden of complexity and the long circuiting of ergic satisfactions. Meanwhile the sublimation, which is a secondary product of the frustration,

appears in Dimension 8, which is a function of the capacity of the culture to bring about sublimation. Germany in the 1920's was an instance of a culture hesitating between these two directions of response to frustration.

Syntality Dimension 7. Efficient Use of Large Resources vs. High Population Density. The variables listed below (with the exception of the third and last) express an energetic concern with mastering the environment and using resources toward a high living standard. The emphasis on large area and travel also suggest operating more freely in a low population density, and one suspects this is a "circumstantial factor" associated with migration into relatively empty new lands as in Australia and Canada. The top variables, in descending order, are as follows: Large farm area per agricultural worker, Many automobiles per capita, Large area, Large energy consumption per capita, High proportion Nordid race, Many miles railroad per capita, Much air travel per capita, Much iron ore production per capita, High average earnings in manufacturing industries, Large Gross National Product per capita, Few Roman Catholics per 1000.

Syntality Dimension 8. Cultural Pressure: Sublimated in Creative Achievement. This has appeared several times before, with such tentative titles as "industrious rationalism" and "scientific industriousness," and with a noted resemblance to the original, larger cultural pressure dimension, 6 above. It shares with the latter some signs of conflict, while it contributes also to gross national product, autos, energy, etc. which appear in two other factors high in "advanced" countries. The list of descending significantly loaded variables is as follows: More patents sealed per 100,000, More Nobel Prizes in Science per 10,000,000, More telephones in use per capita, Greater age of institutions, Low ratio of agricultural to total workers, Much excess of divorces over marriages, High Gross National Product per capita, Much domestic mail per capita, Many mental hospital beds per capita, High proportion Nordid race in population, Low mean annual temperature, Many duodenal ulcers per capita, High energy consumption per capita, High percent of employed in industry, High membership of international organizations, governmental and nongovernmental, Many automobiles per capita, Much air travel per capita, Low ratio early to late marriage.

The theory we prefer is that it is an associate of cultural pressure, both developed by and contributing to living complexity. However, instead of the frustrations of simpler ergic satisfactions issuing in conflict they are here sublimated rationally into achievement, particularly scientific achievement, as seen in Nobel Prize performance, but also into invention, literature, etc. At the same time a psychological price is paid as shown by the duodenal ulcer

rate, divorce rate, and mental hospital beds. The association with Protestant religion and Nordid race suggests a probable tie with the "protestant ethic" of work and emotional control as speculated upon by Weber and others. It invites correlation with personality measures on population samples.

Syntality Dimension 9. Cosmopolitan Muslim. This factor has such a marked religious loading—few Catholics, many Muslims—relative to any other yet studied that it is difficult to avoid a religious culture interpretation. It has at the same time a cosmopolitan character in the indicators of many language and ethnic groups and also has the suggestion of a male dominated society. "Cosmopolitan-Muslim" therefore is the best phrase, though cosmopolitan does not have the popular association of "sophisticated" but simply its true meaning of a civic group unanchored to any purely national culture. The variables are as follows: High percent of illiterates, Large number of language groups, Few Roman Catholics per 1000, Many Muslims per 1000, Low ratio female to male university students, Many narcotic seizures reported per 100,000, Few Treaties as multilateral alliances, Low average earnings in manufacturing industries, Large number of ethnic groups, Few calories per day per capita.

Syntality Dimension 10. Political-Cultural Alertness. There is a thrust of meaning throughout the following variables toward political activity and concern with defense, along, however, with general cultural movement as shown by many inventions and by a strong movement to education of women. It suggests a progressive culture caught in international pressures. The list of well loaded variables from the top is as follows: More air travel per capita, Less duodenal ulcers per capita, Higher ratio female to male university students, More government expenditure on arms per capita, Higher Nordid race proportion in population, More patents sealed per 100,000, Larger population size, Fewer Roman Catholics per 1000, More telephones per 1000, Fewer deaths by TB per capita, More representatives at United Nations Organization, More political parties.

Syntality Dimension 11. International Concern. The dimension here is surely one of syntality as such. It represents behavior of the group as a group, concerned with international participation, in treaties, U. N. representation, etc. It is an "effective synergy" (13) which reaches out beyond group borders and concerns itself, in politics, and probably in trade and commerce, with the social, world polity of nations. The fact that it is *not* concerned with expansion as such suggests moral leadership. The key variables are the following: Many international organizations joined, Many representatives at United Nations Organization, Many political parties, Many strikes and industrial disputes,

Mean treaties as multilateral alliances. Many cities over 100,000, high urbanization. Less expansion of area politically controlled. More automobiles per capita. More calories per capita.

Syntality Dimension 12. Anxious Responsibility. In social theory terms like "Protestant Ethic" again come to mind here. One thinks also of McDougall's (22) theory of association of Roman Catholic external control, and low suicide and drunkenness with Mediterranean race. However, it also suggests an environmental explanation as a more generalized weather stress dimension with colder climate and more calories needing to be consumed. The variables are as follows: Few of Mediterranean race, Many deaths by suicide, Many deaths by hypertension, High political interest, % of electorate voting, High Protestants per 1000, Low mean annual temperature, Many calories per day per capita.

From this point on the factors have more limited loading patterns such that it seems appropriate to give only a tentative title and a couple of sentences to hold the concept, pending cross-checks with later research.

Syntality Dimension 13. Nordid-Protestant Industriousness. Strangely, this repeats control aspects of the preceding factor pattern. Why there should be two having a possible "Protestant ethic" interpretation remains to be clarified. This may be an offshoot in the industrial phase of culture, for it emphasizes industrial development and energy consumption heavily. Achievement in industry and business is its central theme, as the following markers show: High average earnings in industry, High ratio employment to unemployment, High energy consumption per capita, Low ratio agricultural to other workers, Low number of Muslims per 100, High fraction of eminents eminent in music, Many automobiles per capita, High Gross National Product per capita, High proportion Protestants per 1000, Many telephones in use per 100, High proportion Nordid race in population.

Syntality Dimension 14. Oriental Self-Sufficiency. This is one of the hardest patterns yet to interpret, partly because of the brevity of the loading list. It suggests an Oriental culture, with care over the family, little government interference, and more interest in pleasant living than material gain. The markers are as follows: Many national holidays, Many of Mongoloid race in population, Low ratio of early to late marriages, Low government income tax receipts, Few riots, Low coal reserves, Low Gross National Product per capita.

Syntality Dimension 15. Movement Toward Population Control in Nonindustrial Conditions. Here we see a dimension that may define an historical process rather than a fixed trait. One thinks of modern India. The associates

suggest an unambitious culture, but tackling the population control problem. Many birth control clinics per capita. Many people per dwelling. Many national holidays. Large population size. Many politically eminent among eminents. Low proportion of electorate voting. Few cancer deaths per capita. Few deaths by heart disease per capita. Low police strength per capita. Low sugar consumption per capita. Few automobiles per capita. Little domestic mail per capita.

Syntality Dimension 16. Stability and Restraint. A structure character of plentiful stability seems here to be associated with what are probably population traits suggesting emotional steadiness and restraint. They are Larger aristocratic residue. Few deaths by cirrhosis of liver. More birth control clinics. Low relative eminence in field of music. Few Roman Catholics. Few deaths by suicide. Few cancer deaths per capita. Few automobiles per capita. Higher Nordid race proportion. Low energy consumption per capita.

Syntality Dimension 17. East Asian Buddhist. The title indicates all that may at present be possible in interpretation of this factor. Loaded variables are High % Mongoloid race in population, Low % Negroid race in population, Many narcotic seizures reported, Few different religious groups.

Syntality Dimension 18. Nonconformist Religious Tendency. Like certain other of the later factors, this presents a mixture of variables in which only a subset can be perceived to have a common character. That character is the obverse of Mediterranean Catholicism, for it shows many nonconformist religions, an absence of saints' days and other holidays, and low age of institutions, etc., as follows: Large population, Large number of religious groups, Few Mediterranean race, Few Roman Catholics, Few National holidays, Many telephones in use, High number of riots, Low age of institutions, Much foreign aid given, High Nordid % in population.

Syntality Dimension 19. Tendency to Aid Other Countries. The highest variable here is foreign aid given, relative to wealth as indicated by gold holdings. Some greater political interest is shown by voting interest and a generally higher level of international interaction as shown by war involvement. The other variables have appeared frequently elsewhere. The totality of variables is as follows: Much foreign aid given relative to gold holdings, Many cancer deaths per capita, Large coal reserves, High frequency of involvement in war, Few Jews per capita, High proportion of electorate voting, High sugar consumption per capita, Many telephones in use per 1000.

Syntality Dimension 20. Conservative, Authoritarian, Simplified Family Society. This is probably the factor most clearly supporting the concept of a traditional, "authoritarian" dimension in societies. Some lower loaded vari-

ables concerning labor disputes, etc. combine with the heavy drinking to suggest that the police authority, the late marriage, and the restrictions on divorce are accompanied by some conflict. The markers are Low ratio early to late marriages, High proportion Mediterranean race, High police strength per 1000, Low energy consumption per capita, Few telephones in use per 1000, Many deaths cirrhosis of liver per capita, Little excess of divorces over marriage, Little domestic mail per capita.

Sentality Dimension 21: Self-Sufficient, Stable, Hard Work Values. If we interpret the contribution to low consumer price as arising from honest work for wage, consistent with few national holidays and successful working of small farms, then this dimension can be hypothesized to be one of attitude values in the general population, as indicated by the following: Low consumer price index, Little excess of divorces over marriages, Few national holidays, Small farm area per agricultural worker, High energy consumption per worker, Many automobiles per capita.

Attempts to interpret the higher loadings on the remaining three relatively small factors—22, 23, and 24—have been so unsuccessful that we judge them to be common error factors, such as might be expected in 24 factors extracted from 82 variables in which error of measurement is unavoidable. Accordingly their patterns are left in the factor pattern matrix² for inspection by whoever wishes.

D. DISCUSSION AND CONCLUSION

In order not to exceed article length, this presentation has confined itself to defining the factor analytic procedures, ending with a statistical statement of the patterns, with but minimal theoretical interpretation of the factors discovered. More comprehensive discussion of interpretations, examination of the taxonomic groupings (by profiles of national scores) and higher order factoring of the primary correlations will be found elsewhere (9, 12, 14, 30). Not until the typical grouping of nations has been presented (9) will interpretation be possible to the point of well defined hypotheses.

From a factor analytic point of view the appearance of as many as 24 factors from 82 variables, and the finding that some of these factors have somewhat mutually similar patterns, may justifiably excite the suspicion in some researchers that either incomplete data series or changes of identity of operational data definition in different countries have produced an unsatisfactory correlation matrix. While we also entertain this possibility the fact is that the factor analytic properties, such as the indication of factor number, the intensity and success of simple structure search, the statistical significance of the

structure reached, etc. are very good. Actually 24 factors from 82 variables as diversely chosen as these is not unusual [see, for example, the CAQ results of Kameoka (20) and of Cattell (8) with 28 factors from 112 variables].

What is more relevant to evaluation of the factors is that difficulties of interpretation are going to arise through (a) the above uncertainty of comparability of variables with earlier researches—e. g., that certain disease rates, such as cancer, may indicate partly real differences and partly differences in diagnostic efficiency and (b) the reliability coefficients varying appreciably among variables, from a high value for number of cars registered, telephones installed and dollar value of national product, to lower values on number of alcoholics, duodenal ulcers, suicides, real expenditure on books, and number of mental hospital patients. (Note not all of the last mentioned were finally included.)

Both of these undoubted "defects" make their principal demand in terms of the interpretive skill of the analyst, who must be experienced enough in factor analysis to recognize that lower reliability will cause the variables concerned to be less prominent than otherwise, yet to repeat themselves somewhat confusingly in several factors. The implications for strategic next steps are that (a) congruences need to be worked out among available studies before further data are gathered and a more refined choice of variables is made, and (b) the distortion of factor patterns which results from too diverse a range of "species" in 100 countries needs to be cleared up by factoring *within* species (even though on smaller samples) when taxonomic grouping has been achieved, thus, leading to distinct within-type and between-type dimensions. As to (a) it can already be said (30) that at least nine of the present factors replicate those of other studies with statistically significant matches and seem worthy of intensive interpretative research. As to (b) we strongly suspect that the technical analysis elsewhere (7) of the effect of mixing species types in a factor analysis accounts for the difficulty we have had in demonstrating internally consistent patterns after the first 10 factors. Probably, at least one should factor undeveloped and developed countries in separate samples, or factor both together only on a more basic selection of variables having constant meaning across both. However, the breakdown into species types for this purpose should first be done on an objective basis, and this we are in process of doing (9).

To those experienced in the scientific application of factor analysis the reminder is perhaps scarcely necessary that a factor obtained in an R-technique single occasion experiment is interpretable either as a fixed unitary *trait* (in this case one of syntality) or as a *state* or *process* axis. For

example, here, Dimensions 2 (Intelligent Affluence), 4 (Size), and 7 (Population Density) may be largely traits, while 10 (Political Alertness), 15 (Population Control), and 19 (Tendency to aid other Countries) may represent processes at a high level at a particular historical moment.

APPENDIX

LIST OF POPULATION, STRUCTURE AND SYNTALITY VARIABLES USED IN THE ANALYSIS

Factor matrix number	Title
1.	Age of institutions
2.	Agricultural workers to total workers
3.	Air travel per capita (10)
4.	Area
5.	Aristocratic residue (monarchy)
6.	Armed manpower per capita (1000)
7.	Automobiles per capita (100)
8.	Birth control clinics, per capita
9.	Gross birth rate (1000)
10.	Cancer deaths per capita (1,000,000)
11.	Coal reserves
12.	Percent in utilities and communication transfer
13.	Gross death rate (1000)
14.	Excess of divorces over marriages
15.	Duodenal ulcers per capita (100,000)
16.	People per dwelling
17.	Average earnings in manufacturing industries
18.	Employment/unemployment ratio divided by 10
19.	Public expenditures on education as % of total public expenditures
20.	Energy consumption, per capita
21.	Number of ethnic groups
22.	Farm area per agricultural worker
23.	Ratio of female to male university students
24.	Calories per day per capita divided by 10

25. Foreign aid given or received relative to gold holdings
26. Government expenditure on arms per capita
27. Gross national product per capita (income) divided by 10
28. Deaths by heart disease per 1,000,000
29. Deaths by hypertension per 1,000,000
30. **Percent of illiterates**
31. Income tax, total government receipts divided by 1000
32. Percentage of economically employed in industry
33. Acceptance of International Court of Justice
34. Frequency of involvement in war, 1915-1965
35. Iron ore production divided by 1000
36. **Jews per capita (1000)**
37. **Number of language groups**
38. Deaths by cirrhosis of the liver, per capita (100,000)
39. **Domestic mail per capita**
40. **Malaria deaths per capita**
41. **Ratio of early to late marriages**
42. Mediterranean race, proportion in population
43. **Mental hospital beds per capita**
44. Number of specific government ministries
45. Number of Moslems per 100 population
46. Mongoloid race, proportion in population
47. Motion picture attendance, per capita
48. **Relative eminence in field of music**
49. Narcotic seizures reported per 100,000
50. **Number of national holidays**
51. Negroid race, proportion in population
52. International organizations, governmental and nongovernmental
53. **Nobel prizes in science per 10,000,000**
54. Nordid race, proportion in population
55. Patents sealed per 100,000 population
56. **Police strength per 1000 population**
57. Number of political parties (above 5%)
58. Politically eminent, proportion among all eminents
59. Political voting interest, proportion of electorate voting
60. **Population size in 1,000,000's**
61. **Degree of press censorship**
62. **Prostitution, agreement to suppress**
63. **Protestants, per 1000**

64. Railroads in miles per 1000 population
65. Number of religious groups (above 5%)
66. Number of riots, 1963-1967
67. Roman Catholics per 1000
68. Standard consumer price index divided by 100
69. Strikes and industrial disputes divided by 10 (for 1970)
70. Sugar consumption per capita
71. Deaths by suicide per 100,000
72. Deaths by syphilis per 100,000
73. Telephones in use per 1000
74. Mean annual temperature
75. Tertiary occupations, % economically active in
76. Treaties, as multilateral alliances
77. Deaths by tuberculosis per capita, 100,000
78. Deaths by typhoid fever per 100,000
79. Number of representatives at United Nations Organization
80. Urbanization, number of cities over 100,000 population
81. Irregular executive transfers; revolutions
82. Expansion of area politically controlled

Note: The numbers after "per capita" indicate that the value in the sources used was actually "per hundred" or "per thousand" etc. Naturally, in correlational analysis, the different size of bases does not matter.

Racial definition titles follow Baker (1).

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COLLABORATOR STATUS, SUBJECT CHARACTERISTICS, AND CONFORMITY IN THE ASCH PARADIGM*

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SUMMARY

In an investigation of the level of laboratory conformity, it was hypothesized that (a) externals would conform at higher levels than internals and (b) Ss would conform more to high status collaborators than to peers. A total of 40 undergraduates, 20 male and 20 female, participated. The procedures were those of a modified Asch conformity study. The Ss completed Rotter's Locus of Control scale independently of the experimental procedure. Subsequently, collaborator status was manipulated to create high and low status conditions. The experimental results support hypotheses relating locus of control and status of the collaborators to conformity. A significant interaction effect between sex and status of collaborators suggests that status was a more salient variable for males.

A. INTRODUCTION

The study of conformity or compliance is one of central concern in social psychology. The classic experiments by Asch (1, 2) demonstrated the tendency to conform in the laboratory when exposed to the judgments of unanimous majorities. He found that a significant minority (33%) never conformed, a smaller percentage (8%) conformed on all trials, and the remainder displayed some conforming errors.

An issue not explored by Asch is whether certain types of individuals are more likely to conform than others. In the Crutchfield (6) experiment, conformity correlated negatively with intellectual competence and ego strength, and positively with authoritarianism. However, conformists in the Asch and Crutchfield type of experiments did not significantly differ from independent Ss on the Minnesota Multiphasic Personality Inventory (3). It is an open-ended question whether we can define a conforming personality.

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A variable with an apparent relationship to conformity is the internal-external locus of control. This dimension refers to the extent to which people see a relationship between their behavior and rewards. Internal people believe that control resides within themselves, whereas externals believe that outcomes are determined by such factors as luck, chance, or fate (11). Other investigators have indicated moderate relationships to social desirability measured by the Marlowe-Crowne Social Desirability Scale (e. g., 7, 10), and Edwards Social Desirability Scale (4, 5). On the basis of the above relationships, we expect that external Ss conform at higher levels when compared to internal Ss.

The status of the collaborators is another dimension which determines the level of conformity. Relatively high status of confederates (Cs) may elicit higher conformity. Crutchfield (6) found that minority group members conformed to a larger extent in an Asch-type experiment when they were the sole minority member. Jones (8) suggested that a low status group member may try to ingratiate himself with group leaders. There are suggestions, but no precise experiments, which define the relationship of status of Cs to conformity.

This study will seek to determine the following:

1. What relationships, if any, exist between locus of control and conformity in the Asch-type experiment.
2. What relationship, if any, exists between status of Cs and conformity in the Asch-type experiment.

B. METHOD

1. *Subjects*

The 20 male and 20 female undergraduates at Oregon State University who participated in the study completed the Rotter (11) Locus of Control Scale. Subsequently, they were recruited to participate in the Asch-type experiment.

2. *Procedure*

The procedures and instruments were exactly as followed by Asch (2), except for the manipulation of the collaborator status. The Ss entered the experimental laboratory with six other students (collaborators). The investigation is explained as a test of the ability to make perceptual discriminations. Sets of lines of varying lengths are then compared to a standard line, the object being to identify correctly the line which equals the standard line. Eighteen different sets are shown and judged. On 12 of the 18 trials, the Cs choose, by prearrangements, the incorrect line.

In the status condition, the collaborators were introduced as "graduate assistants," two as "senior honor students," and one as a "senior psychology student." In the peer condition, no introduction was made. The Ss were subsequently debriefed.

C. RESULTS AND DISCUSSION

In a two-way analysis of variance for locus of control it was found that externals conformed at a significantly higher level compared to internals ($F = 10.60, p < .001$). This finding establishes a link between belief in external powerful sources of reward and conformity behavior. Perhaps an external locus of control created learned helplessness, which in turn contributed to a willingness to conform. An analysis of variance for status *versus* peer conditions found that Ss exposed to high-status collaborators conformed at higher levels compared to those participating in the peer condition ($F = 9.50, p < .001$).

In the Asch (2) study, the Ss were all male, white college students. The Larsen (9) study was composed of both male and female participants, his female Ss conformed at a higher level than the males. In the present study, it was thought that sex identification might interact with the status of collaborators and produce differential levels of conformity. A two-way analysis of variance with sex and status of collaborator conditions, analyzing for differences in conformity, was completed. The results showed no significant main effects. However, the sex and status of collaborator interaction effect was significant ($F = 6.64, p \leq .05$). The males in the high status condition showed a mean conformity level of 37.5, compared to the female mean level of 14.1. The mean rates were almost exactly reversed for the peer condition with males yielding a mean conformity rate of 13.5, and females a level of 33.5. The t value between males and females in the status condition is 2.64 ($N = 18, t \geq 2.12, p \leq .05$). Completing the t test between males and females for the peer condition yielded a value of -1.30 (N.S.).

Why do American males conform more to the status condition? The differences may be logically rooted in learned sex role training. Males are taught the salience of power as instrumental to goal achievement, whereas females are taught the value of interpersonal relationships (i. e., to get along). The level of conformity is determined by the social cost of resistance, which is differentially evaluated dependent on sex.

Larsen (9) indicated that Asch completed his studies during a period when political activism among students was low, a time known for stifling dissent and unobtrusive students. He reasoned that students in the early 70's were

motivated by many social concerns and would therefore manifest lower rates of conformity. However, since the end of the Vietnam War, student activism has decreased visibly. In its place we find a return to the concerns of the 50's (i. e., preparing for jobs and careers). Instead of political activism, many students are involved in more self-oriented movements (e. g., astrology or Eastern disciplines). Would conformity in the laboratory again correspond to these broader social changes as suggested by Larsen? To compare the conformity levels found in this study with those reported by Asch (2) and Larsen (9), the proportion of the *Ss* conforming on one or more trials was calculated.

The results suggest a relationship between broader social changes and laboratory conformity. We found that 82.5% (or 78.9% in peer condition) of all *Ss* conformed at least once, suggesting that conformity is again on the increase compared to the early 70's [Larsen (9) 62.5%, $Z = 1.79$, $p \leq .10$], and approximating that of the 50's [Asch (2) 76.5%].

At the conclusion of the experimental procedure, the *Ss* were debriefed. Despite the classic nature of the experiment, no *Ss* had expressed an understanding of the study or procedure. It was also apparent that they completely accepted the validity of the experimental rationale. During the experiment, *E* maintained observation of *S* behavior. The discrepancy between the *Ss'* perceptual judgment and that of the unanimous majority produced some experimental anxiety evidenced by *Ss* fidgeting in their chairs, nervously and laughingly expressing opinions of their stupidity (saying: "Oh, god, I must be blind," "What's the matter with me . . . Can I change my answer," etc.), and nervously tapping their chairs (two *Ss* became very hyperactive—gazing at the others, sighing and breathing deeply, soliciting views of the others as to what was wrong with them, etc.).

The *Ss* resolved this uneasiness by conforming in many cases. The salience of status for males was evidenced by the fact that all males in the status condition made some statement about the status of the collaborators during the introduction, whereas only one female *S* made a status-relevant statement. The type of status-relevant statements made included: "Well at first I thought it was my eyes or something since all those graduate students agreed, and I was the only one who disagreed . . ."; "I recall starting feeling strange being the only freshman in the group and figured it must just be me, because all of the seniors and grad students were agreeing on the answer . . .," etc. These observations support the sex-linked salience of the status of collaborators, indicated by the experimental results.

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CROSS-CULTURAL NOTES

Under this heading appear summaries of studies which, in 500 words or less, provide comparable data from two or more societies through the use of a standard measuring instrument; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, **108**, 265-266.

ATTITUDES TOWARD WOMEN IN THE UNITED STATES AND BRAZIL*^{1, 2}

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ROBERT V. LEVINE AND LAURIE WEST

This study compared male and female high school and college students from the United States and Brazil on Spence and Helmreich's Attitudes Toward Women Scale.³ The high school students (second-year students in middle-class schools), college students (lower division students in required humanities courses at schools with reputations of comparable academic difficulty: Fresno City College in Fresno, California, and Universidade Federal Fluminense in Niteroi, Brazil), and the above-mentioned cities were matched as closely as possible. A total of 129 American and 150 Brazilian Ss were used. The Attitudes Toward Women Scale was translated into Portuguese by the back translation method.

Differences in Attitudes Toward Women on the three independent variables (sex, education, and country) were analyzed by a $2 \times 2 \times 2$ factorial ANOVA ($df = 1, 271$ for all results). Several significant results emerged: First, there was a main effect indicating that college students ($\bar{X} = 113.56$) held

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¹ The authors wish to thank Maria Angela Fraga, Oswaldo Fraga, and Dayse Molinari for their help in translation and to Antonio Puhl for his help in obtaining Ss.

² This study was partially supported by a Latin American Teaching Fellowship to the first author.

³ Spence, J., & Helmreich, R. The attitudes toward women scale: An objective instrument to measure attitudes toward the rights and roles of women in contemporary society. *JSAS Cat. Select. Doc. in Psychol.*, 1972, **2**, 66 (Ms. No. 153).

more liberal attitudes than did high school students ($\bar{X} = 91.01$; $F = 96.31$, $p < .0001$). Second, Brazilians ($\bar{X} = 107.18$) scored higher (more liberal) than Americans ($\bar{X} = 96.68$; $F = 20.58$, $p < .0001$). Third, an education \times sex interaction emerged. Although there were no sex differences among college students, high school females had more liberal scores than high school males [$\bar{X}(\text{HS}, \text{M}) = 85.80$, $\bar{X}(\text{HS}, \text{F}) = 94.33$, $\bar{X}(\text{Coll}, \text{M}) = 113.32$, $\bar{X}(\text{Coll}, \text{F}) = 113.78$]; $F = 5.64$, $p < .02$. Fourth, a significant ($F = 40.67$, $p < .0001$) education \times country interaction emerged. American and Brazilian high-school students did not differ, but Brazilian college students had more liberal scores than did American college students [$\bar{X}(\text{HS}, \text{US}) = 93.49$, $\bar{X}(\text{HS}, \text{Br}) = 88.71$, $\bar{X}(\text{Coll}, \text{US}) = 100.13$, $\bar{X}(\text{Coll}, \text{Br}) = 124.23$]. Finally, a significant ($F = 4.97$, $p < .03$) three-way interaction emerged. Female high school students had more liberal scores than male high school students in both the U. S. and in Brazil. For college students, however, the data indicated that American females were higher than American males, but that Brazilian females were lower than Brazilian males [$\bar{X}(\text{HS}, \text{F}, \text{US}) = 94.81$, $\bar{X}(\text{HS}, \text{M}, \text{US}) = 90.40$, $\bar{X}(\text{Coll}, \text{F}, \text{US}) = 102.31$, $\bar{X}(\text{Coll}, \text{M}, \text{US}) = 98.56$, $\bar{X}(\text{HS}, \text{F}, \text{Br}) = 93.74$, $\bar{X}(\text{HS}, \text{M}, \text{Br}) = 83.09$, $\bar{X}(\text{Coll}, \text{F}, \text{Br}) = 120.13$, $\bar{X}(\text{Coll}, \text{M}, \text{Br}) = 130.45$].

The most interesting of the above findings may be that Brazilian college students showed a more liberal attitude toward women than did American college students. This result is especially striking, since American and Brazilian high school students did not differ. This trend may possibly reflect more rapidly changing sex role attitudes among educated Brazilians than normally assumed, differences in higher education between the two countries, or merely a greater motivation to appear liberal among Brazilian college students.

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PERCEPTION OF PARENTAL SEX PREFERENCE BY NIGERIAN CHILDREN*

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Previous studies of children's perception of parental sex preference used an adoption-story technique in which Ss were read a story involving adults' choices of a boy or a girl for adoption.¹ They were asked to indicate their perception of parental choices. There was a clear demonstration that same-sex preference by parents is the dominant pattern of children's perception for the different cultural groups, and there does not seem to be any significant cross-cultural variation in the pattern of children's perception.

The present study presents evidence on parental sex preference as perceived by 600 Nigerian boys and girls drawn from primary and secondary schools. One hundred Ss of each sex belonged to age-groups 4-6, 8-10, and 12-14 years. Children came from middle and lower-middle social classes. Proportion of Muslims to Christians was 1:5. Children belonged to more than two dozen local tribes, but the majority of them were Hausa, Ibo, and Yoruba, the three largest tribes in Nigeria. The technique employed was the same as used by previous investigators. Since the most commonly spoken language and the medium of instruction in schools is English, there seemed no need to translate the questions. Only in the case of 4- to 6-year-olds were the answers written down by the male research assistant.

The results, analyzed in terms of sex preference attributed to an imaginary couple as well as to own parents, significantly indicate that children of all three age groups perceived adults as showing same-sex preference. When asked to indicate agreement of parents on the choice of a single child, Ss' perception slightly favored the male sex.

Results were generally similar to those obtained by previous investigators. It appears that neither psychoanalysis nor the developmental

* Received in the Editorial Office, Provincetown, Massachusetts, on May 3, 1978. Copyright, 1979, by The Journal Press.

¹ Hartley, R. Children's perception of sex preference in four cultural groups *J. Mar. & Fam.*, 1969, 31, 380-387. Khatri, A. A., & Siddiqui, B. B. Preference of parents for sex of offspring as perceived by East Indian and American children: A cross-cultural study *J. Mar. & Fam.*, 1969, 31, 388-392. Zaidi, S. M. H. Parental sex preference as perceived by American and Pakistani children: A cross-cultural study. *Pak. J. Psychol.*, 1976, 9, 3-16.

perspective can satisfactorily explain the direction of the present results. An alternative hypothesis that may be more appropriate seems to be in terms of sociocultural changes which may have de-emphasized the traditional sex roles and the stereotyped notions of male superiority. The perceptions of our Ss should, therefore, be viewed in the light of the changing sociocultural emphasis in favor of an egalitarian cultural milieu. The verbal responses of children giving reasons for their perception of parental sex preference indicated, clearly the ascribed role expectations from each sex in the present-day Nigerian society. Furthermore, the differential role of each parent in training girls for womanhood and boys for manhood may also explain the predominant trend towards same-sex preference. The results, thus, may be seen as indicative of the typical sociocultural state of a society in transition. As the society gradually reaches a steady state and becomes less and less sex-separated as a result of sociocultural changes, the differential perception of the importance of one sex over the other may decrease and each sex may come to realize its appropriate role in society.

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ORIENTATION TO AUTHORITY VERSUS INDEPENDENCE OF THOUGHT IN MALAYAN AND NEW ZEALAND STUDENTS*

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Social background and motivation towards learning are often different between the Malayan students studying in Australia and New Zealand and their indigenous counterparts. Humility and an uncritical, accepting attitude towards authority is central to the Malayan family and social structure. Special status is also attached to a return from an education abroad and insures the person an advantaged position in competitive fields of employment together with greater social prestige. Commitments to achieve and to conform to establishment demands are often quite marked. It was therefore predicted that the Malayan attitude to learning would reflect these influences, and that Malayan students studying in New Zealand would tend to approach their studies as passive recipients of facts primarily through memorization. It was also predicted that the authority structure in the Malayan family would lead to a higher intolerance of ambiguity.

The Ss were 32 Malayan students (predominantly Chinese) who were temporarily students in New Zealand and who constituted almost all of those on the University of Waikato campus in 1974. They were matched in terms of year of university, age (18 to 24 years), and sex with 32 New Zealand counterparts.

The first measure covered a range of attitudes relating to authority and preferred method of learning with 24 items of high item total correlation being taken from a pool of 64 items. Budners test of intolerance of ambiguity was the second measure.

Three fairly clear factors were extracted by the method of principal components from the attitudes to learning test. The Items formed quite definite clusters. The first factor was identified as *acceptance of authority* versus *independence of thought*. The second factor represented *formality* of the learning situation, and the third factor indicated a general *evaluation of the university social atmosphere*.

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covered by locally available street atlases. The sampling method was door to door random cluster sampling. This is the method used by most British and Australian public opinion polls where it generally gives very accurate results. The sample N s were 100 in Glasgow, 100 in London, and 95 in Sydney. A greater than this give very little gain in statistical significance.

The means (and SD s) observed were 31.38 (5.17) in London, 30.73 (5.48) in Glasgow, and 31.36 (5.38) in Sydney. Reliabilities (α) of the scale were respectively .66, .71, and .70 in the three cities. The mean scores are then close to being identical in the three societies and such differences as do exist are certainly not significant. The reliabilities are at a level to be expected with a short form of a scale.

Australians may in some senses be more conservative than others, but what has perhaps been shown here is that one's tendency to dominate others is a deep-seated personality trait which is relatively unaffected by variations in the surrounding culture.

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ACHIEVEMENT MOTIVATION OF ENGINEERING AND NONENGINEERING STUDENTS IN INDIA^{1,2}

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The NachNaff scale is a questionnaire developed by Lindgren¹ which has demonstrated some validity as a measure of achievement motivation. The scale is composed of 30 pairs of achievement- and affiliation-oriented adjectives presented in forced-choice format, and scored in the achievement-oriented direction. Adjectives were drawn largely from the Need for Achievement and Need for Affiliation scales of Gough's Adjective Check List.⁴

A Bengali translation of the NachNaff scale was given a preliminary tryout with 50 University of Calcutta students. The corrected split-half reliability of the scale was found to be .75. The students also completed a questionnaire composed of items measuring dependency on family and friends, based on the Bose-Das Gupta Social Morale Inventory.⁵ The NachNaff scores of the students correlated $-.68$ ($p < .01$) with their scores on the social dependency scale, a finding which suggested that the Bengali version of the NachNaff has a high degree of validity.

The Bengali version of the NachNaff scale was then administered to students attending a number of institutions of higher education located in the Calcutta area, in order to test the hypotheses that engineering students would score higher than nonengineering students and that men would score higher than women. The engineering sample (46 men and 49 women)

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¹ The authors wish to thank G. A. Collado, Psychology Department, San Francisco State University, for his help with statistical analysis, and Fredrica Lindgren for her editorial assistance.

² Requests for reprints and a copy of the NachNaff scale may be directed to either the first author or the third author whose addresses appear at the end of this article.

³ Lindgren, H. C. Measuring need to achieve by NachNaff scale—a forced-choice questionnaire. *Psychol. Rep.*, 1976, 39, 907-910.

⁴ Gough, H. G. The Adjective Check List as Personality Assessment Research Device. *Psychol. Monog. Suppl.*, 1960, 6, 107-122.

⁵ Bose, S., & Das Gupta, S. K. Social Morale Inventory. Calcutta, India: Department of Applied Psychology, University of Calcutta, 1976.

consisted of students enrolled in an institute affiliated with the University of Calcutta. Students in the nonengineering sample (97 men and 96 women) were taking courses in arts, humanities, commerce, and science at the University of Calcutta or at colleges affiliated with it. The ages of students in each of the samples ranged from 18 to 22 years.

A two-way analysis of variance indicated that both hypotheses were supported. The F for sex of 5.9 was significant at the .025 level, and the F for curriculum of 10.24 was significant at the .005 level (both one-tailed). The sex-by-curricula F of .2 was nonsignificant. The means for the men were Engineering, 14.89, and Nonengineering, 10.6. The means for women were Engineering, 11.53, and Nonengineering, 8.21.

The means for the nonengineering students tended to be somewhat lower than those reported by Lindgren for American university and community college students.³ Although the differences between Bengali and American means were significant at the .05 level, the two sets of data are not exactly comparable, inasmuch as they are based on tests taken in different languages. Nevertheless, the differences are consistent with the impressions that informed observers have made of the different weight placed on achievement by the two cultures.

The results of the present study provide confirmation that the rationale, content, and structure of the NachNaff scale can survive translation into languages other than English, and that the scale may be useful in investigations of achievement motivation conducted in still other cultures.

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REPLICATIONS AND REFINEMENTS

Under this heading appear summaries of studies which, in 500 words or less, provide useful data substantiating, not substantiating, or refining what we think we know, additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfilm Publications.

The Journal of Social Psychology, 1979, 108, 275-276.

PERCEIVED DISTINCTIVENESS OF THE HANDICAPPED*¹

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DINA SOLSBERG, AND LYNDA TAMMEN

Handicapped individuals are treated differently from nonhandicapped individuals in many respects. On the one hand, we tend to be more inhibited toward them,² but we are also more willing to help these individuals.

Both the negative and positive aspects of interactions with the disabled may stem from the distinctiveness associated with disability. One way of reducing this perceived distinctiveness is to see the disabled performing everyday activities that nonhandicapped individuals also perform. However, while this may reduce the negative aspects of these interactions, it may also reduce the more positive aspects. In the present study, Ss were given the opportunity to help an individual who apparently was either disabled or nondisabled. It was hypothesized that (a) the disabled individual would receive more help than the nondisabled individual, and (b) this difference would be reduced when the individual appeared to be carrying out a normal, everyday activity.

The experiment was a 2×2 factorial. Ss were given the opportunity to

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¹ The authors would like to thank Dr. Mary Tierney for her helpful comments on earlier versions of this article.

² Kleck, R., Ono, H., & Hastorf, A. H. The effects of physical deviance upon face to face interaction. *Hum. Relat.*, 1966, 19, 425-436.

help a target person who was either disabled or not (Disability factor), and either appeared to be on her way home from grocery-shopping (carrying a bag of groceries), or did not (Activity factor).

The site was an uncontrolled intersection, one block north of a set of traffic lights. Each trial began when a minimum of five cars had stopped for the lights. As the first of these cars left the lights and approached the site, the target person (a female) and a male accomplice stepped out of concealment, approached the intersection, and waited at the curb to cross the street. In the disabled conditions, the female target-person was in a wheelchair, and was pushed by the male toward the curb. In half the trials the target carried a large bag of groceries; in half she did not. The number of cars passing the site (to a maximum of five) were counted until one stopped to allow the target and her companion to cross. This constituted the helping measure.

Mean number of cars passing the target before one stopped were 4.67^a, 1.58^c, 4.17^{ab}, 3.25^b for the nondisabled-no groceries, disabled-no groceries, nondisabled-groceries, and disabled-groceries conditions, respectively.³ Analysis of variance revealed a main effect for the Disability manipulation [$F(1, 44) = 48.0, p < .001$]. Fewer cars passed by the disabled individual than the nondisabled individual before one stopped to allow her to cross. Analysis of variance also revealed a significant Disability \times Activity interaction [$F(1, 44) = 5.27, p < .025$]. While cars stopped sooner for the disabled than the nondisabled person when she was not carrying groceries, this difference did not occur when the target was carrying groceries.

These results support the notion that the perceived distinctiveness of handicapped individuals can be reduced by letting others see them carrying out normal activities. In the present study, this resulted in less helping for the handicapped person, but it may also result in less inhibited interactions with the disabled.

³ Means carrying different superscripts differ at the $p < .05$ level of significance.

ATTRACTIVENESS AND INTERPERSONAL SPACE¹

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Studies in proxemics have determined that invasions of interpersonal space increase arousal, stress, and discomfort. Middlemist, Knowles, and Matter² found that a stranger's close proximity in a lavatory resulted in micturition delay and persistence, while Ellsworth, Carlsmith, and Henson³ showed that drivers, when stared at, crossed an intersection at a quicker rate than a "no-stare" group. Other recent research has indicated that the specific affective reaction to close interpersonal distance is determined by stimulus cues from other persons and from the environment.⁴

When a person is about to cross a street, general arousal created by an intruder who violates his interpersonal space would probably have an immediate effect on the speed at which the street is crossed. When the intruder is attractive, the objective of the pedestrian is still to get across the street, but at the same time there might be an inclination to approach the intruder. If the intruder is unattractive, however, the objective of crossing the street may be pursued with greater haste in an effort to avoid further contact with the aversive intruder. The present study investigated the possibility that intrusions into personal space can cause different affective experiences and hence different behaviors.

In a prior validation of two samples who differed in order of presentation, it was determined that the same intruder, when dressed in two separate disguises, could produce significantly different attractiveness ratings [$t(40) = 3.10, p < .01$, and $t(67) = 9.63, p < .001$]. By staring and coming within a distance of about 15 centimeters of the Ss, the intruder

* Received in the Editorial Office, Provincetown, Massachusetts, on April 12, 1978. Copyright, 1979, by The Journal Press.

¹ Reprints are available from the third author at the address shown at the end of this article.

² Middlemist, R. F., Knowles, E. S., & Matter, C. F. Personal space invasions in the lavatory: Suggestive evidence for arousal. *J. Personal. & Soc. Psychol.*, 1976, 5, 541-546.

³ Ellsworth, P. C., Carlsmith, J. M., & Henson, A. The stare as a stimulus to flight in human subjects: A series of field experiments. *J. Personal. & Soc. Psychol.*, 1972, 3, 302-311.

⁴ Freedman, J. L. *Crowding and Behavior*. San Francisco: W. H. Freeman, 1975. Sundstrom, E. An experimental study of crowding. Effects of room size, intrusion, and goal blocking on non-verbal behavior, self-disclosure, and self-reported stress. *J. Personal. & Soc. Psychol.*, 1975, 32(4), 645-654.

violated the personal space of 120 males and females of varying ages who were about to cross the main intersection of a small Midwestern city. A baseline of average time to cross the intersection was taken for four control groups (males and females judged to be either under or over 35 years of age). It was hypothesized that the intrusion, when compared to the responses of the no-intruder control group, would result in the Ss crossing the intersection at a slower rate of speed (attractive) or at a faster rate (unattractive). This hypothesis was confirmed by a significant main effect of intruder's attractiveness on street-crossing times [$F(2, 168) = 17.32, p < .01$]. Significant main effects were found for age—younger crossing faster [$F(1, 168) = 35.18, p < .01$]—and sex—males crossing faster [$F(2, 168) = 4.31, p < .05$]. A significant three-way interaction was also obtained [$F(2, 168) = 3.87, p < .05$], indicating mean crossing times of older males seem to have been affected the most by the intrusion variable, while those of younger females seem to have been least affected.

A likely explanation for the intruder effect is that general arousal created by the violation of personal space is attributed to fear and disgust when the intruder is unattractive, thus causing the S to cross the intersection at a faster pace than the other two groups. In the case of the attractive intruder the same general arousal is created by the violation of interpersonal space, but it is attributed to pseudo-romantic or affiliative emotion and the S crosses the intersection more slowly. The present study does not verify that this attributional process accounts for the behavioral differences in street crossing; this would have to be determined by directly asking the Ss how they attributed their arousal, if indeed they did experience any.

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LEVELS OF CONVICTION AS PREDICTORS OF BEHAVIOR*

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Considerable research has been done in an effort to determine under what circumstances people will come to the aid of others. Conviction, defined as an explicit set of organized beliefs and values, likely plays a role in determining helpful behavior, but it is questionable whether it is a dependable predictor. The purpose of this study was to explore the role of level or intensity of conviction in one's intervening in a crisis situation.

Ss were 30 undergraduate paid volunteer university students having a mean age of 25 years. Fourteen were female and 16 male. In the first phase of the experiment all filled out the Machiavellianism Scale,¹ the Altruism Scale,² and a helpfulness questionnaire (constructed especially for this research). Scores were converted into standard scores, and an overall mean score was derived for each S. Ss were then classified as "high" (six males and four females), "medium" (five males and five females), and "low" (five males and five females) in conviction. For the second phase, the experimental room was arranged such that a \$10.00 bill, carefully placed in advance under the chair occupied by the monitor, could be clearly viewed by a confederate (C) but not by the Ss nor the research assistant who monitored the experiment. Each S was told to write a brief narrative about a controversial issue while in the presence of either a male or female C who, ostensibly, was also an experimental S. Equal numbers of Ss were paired with the same sex and opposite sex C. While giving instructions for the essay, the monitor was called from the room with the explanation that he would be gone for just a minute. While the monitor was absent, the C "discovered" the money, walked to the chair, picked up the money, and pocketed it after exclaiming, "Look, a \$10.00 bill! This must be my lucky day. Finders, keepers!" Shortly thereafter, the monitor returned with the

* Received in the Editorial Office, Provincetown, Massachusetts, on April 13, 1978. Copyright, 1979, by The Journal Press.

¹ Christie, R., & Geis, F. L. *Social Psychology. Studies in Machiavellianism*. New York & London: Academic Press, 1970.

² Sawyer, J. The altruism scale: A measure of co-operative, individualistic, and competitive interpersonal orientation. *Amer. J. Sociol.*, 1966, 71(4), 407-416.

topic of the essay and further explained that the purpose was to study attitudes of students toward controversial topics and that they had five minutes to complete the essay. The *C* began writing immediately. The monitor shuffled through papers on his desk and in approximately 30 seconds said, "I thought I had a \$10.00 bill on my desk." The *C* who "found" the money said nothing but continued to write diligently. The monitor looked for the money briefly and then said, "Oh, well, maybe I didn't have a ten," and sat down at the desk. This procedure was followed for all *Ss*.

Degree of helpfulness was numerically determined by type of response by the *Ss*: 5 = *S* reported as soon as monitor returned; 4 = *S* reported when assistant announced his money was missing; 3 = nonverbal report (head nods or overt eye movements); 2 = *S* communicated privately with monitor as soon as monitor returned; 1 = *S* communicated privately when he or she finished writing the essay; 0 = *S* took no action.

Data were analyzed by an ANOVA and a stepwise multiple regression which revealed that there were no differences between the helpful behaviors of *Ss* in the three different levels of conviction nor between male *versus* female *Ss*. However, male *Cs* were significantly less likely than female *Cs* to be reported to the monitor [$F(1/26) = 4.20, p < .05$]. It was concluded that one's level of conviction was not independently an accurate predictor of helpful behavior but that characteristics of the persons involved could potentially be a more accurate index of behavior.

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INGRATiation AS A MEDIATING FACTOR IN INTERSEX HELPING BEHAVIOR¹

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A number of studies have examined the interaction between the sex of the requester and the sex of the person being asked for help. Emswiller, Deaux, and Willis found that Ss tended to help requesters who were more like the Ss themselves.² Dependence was indicated to be the key factor by Schopler and Bateson.³ Females gave more help to dependent people, while males tended to help less dependent people. Gruder and Cook found that sex had little effect on the amount of help given. Both sexes tended to help the dependent persons more than less dependent persons.⁴ Gruder and Cook also concluded that there was no support for an ingratiation hypothesis of intersex helping behavior. Bickman, however, did find ingratiation to be a factor.⁵ He noted that one may grant help to a person of the opposite sex in hope of gaining the opportunity for more intimate social interaction.

The present study was designed to test Bickman's ingratiation hypothesis in a face-to-face situation. Ss were approached, while the S was alone, by either a male E or a female E alone or by a couple—one male E and one female E together. When together the Es would alternately initiate the interaction by saying "Hello, I'm _____ and this is my wife/husband _____." The S was then asked, by the same E, to participate in an experiment to be conducted in the near future.

If the S perceived the Es to be a married couple working together, the prospect of more intimate interaction would not seem likely. If ingratiation was the mediating factor, it was expected that more Ss would say yes when

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¹ The authors express appreciation to Professor James Bradac.

² Emswiller, T., Deaux, K., & Willis, J. E. Similarity, sex and requests for small favors. *J. App. Soc. Psychol.*, 1971, 1(3), 284-291.

³ Schopler, J., & Bateson, N. The power of dependence. *J. Personal. & Soc. Psychol.*, 1965, 2, 247-254.

⁴ Gruder, C. L., & Cook, T. D. Sex, dependence and helping behavior. *J. Personal. & Soc. Psychol.*, 1971, 19(3), 290-294.

⁵ Bickman, L. Sex and helping behavior. *J. Soc. Psychol.*, 1974, 93, 43-53.

asked by an *E* of the opposite sex acting alone than when the *Es* were together.

Ss were 120 male and 120 female students at the University of Iowa. They were randomly assigned to the experimental groups. The variables manipulated were the sex of the requester, sex of the *S*, and whether the *Es* acted alone or together.

When the *Es* acted alone, 68.3 percent of the *Ss* said yes to the opposite sex requester, while 48.3 percent said yes to the same sex requester ($Z = 2.33$, $p = .01$). When the *Es* acted together, there was a trend (not significant) in the opposite direction. Sixty-eight percent said yes to the same sex requester, while 56.6 percent said yes to the opposite sex requester ($Z = -1.44$, $p = .07$).

The results support Bickman's ingratiation hypothesis. It seems that a key factor in ingratiation is the prospect of more intimate interaction in the future. When the key factor is removed, some other mediator, possibly similarity or dependence, dominates.

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A FIELD STUDY ON THE RELATIONSHIP OF ENVIRONMENTAL FACTORS TO HELPING BEHAVIOR*¹

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University of Illinois/Medical Center*

ROBERT H. L. FELDMAN AND VICTOR REZMOVIC

Research on helping behavior has generally ignored the physical aspects of environmental settings and their relationship to helping behavior. Studies that have examined environmental variables have looked at broad environmental factors. For example, Latane and Dabbs² reported differences in helping behavior between the geographical regions of the South, Northwest, and Midwest.

The present research was designed to examine the relationship of specific environmental factors to helping behavior where a victim was not explicitly present. Helping behavior was operationally defined as the answering of a ringing public pay telephone. A total of 72 environmental settings containing a public pay telephone were chosen in a city in upstate New York.³ During the maximum time of two minutes that the telephone was ringing, the authors observed (a) whether the telephone was answered and (b) the environmental factors of the population—degree of movement, density, nearness to the telephone, presence or absence of a functionary, time of day, and type of setting.

These factors were used to predict telephone answering in a multiple regression analysis. The total amount of variance, $R^2 = .36$, explained by the multiple regression equation was significant [$F(5, 54) = 4.8, p < .01$]. Movement of population by itself accounted for .31 of the variance. The remaining variables did not significantly contribute to the explanation of answering.

* Received in the Editorial Office, Provincetown, Massachusetts, on June 19, 1978. Copyright, 1979, by The Journal Press.

¹ Reprints are available from the first author at the address shown at the end of this article.

² Latane, B., & Dabbs, S. Sex and helping in Columbus, Seattle and Atlanta. Paper presented at the meeting of the American Psychological Association, Honolulu, Hawaii, August 1972.

³ Twelve cases were then removed from this sample because the telephones were used for business purposes and, therefore, did not qualify as helping situations.

In terms of movement, the less the movement in the population, the more the telephone was answered. In environmental settings where no one was in movement the telephone was answered 82% of the time; in settings with half of the population in movement the telephone was answered 67% of the time; while in settings where everyone was in movement, the telephone was answered 38% of the time. This result is consistent with the findings of Darley and Batson.⁴ They found that the more their Ss were in a hurry, the less they helped. Due to time pressure the hurrying individual is less aware of the potential helping situation as a situation where helping is needed. Hurrying individuals, according to Milgram,⁵ have less time to get involved with helping situations because they are preoccupied with their own needs and put a low priority on stimuli outside their needs; thus, they are in a state of overload. The individuals hurrying through the ringing public pay telephone environment probably heard the telephone, but did not interpret the ringing as something which warranted their concern.

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⁴ Darley, J. M., & Bateson, C. D. "From Jerusalem to Jericho": A study of situational and dispositional variables in helping behavior. *J. Personal. & Soc. Psychol.*, 1973, 27, 100-108.

⁵ Milgram, S. The experience of living in cities. *Science*, 1970, 167, 1461-1468.

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Abnormal	<i>Abn.</i>	Japanese	<i>Jap</i>
Abstracts	<i>Abst.</i>	Journal	<i>J.</i>
American	<i>Amer</i>	Mathematical	<i>Math</i>
Anatomy	<i>Anat.</i>	Measurement	<i>Meas.</i>
Animal	<i>Anim.</i>	Medical	<i>Med.</i>
Applied	<i>Appl.</i>	Mental	<i>Ment</i>
Archives	<i>Arch</i>	Monographs	<i>Monog.</i>
Association	<i>Assoc</i>	Neurology	<i>Neurol.</i>
Attitude	<i>Attit.</i>	Opinion	<i>Opin.</i>
Australian	<i>Aust.</i>	Orthopsychiatry	<i>Orthopsychiat.</i>
Behavior	<i>Behav.</i>	Personality	<i>Personal.</i>
British	<i>Brit.</i>	Personnel	<i>Person.</i>
Bulletin	<i>Bull.</i>	Philosophy	<i>Philos</i>
Bureau	<i>Bur.</i>	Physics	<i>Phys.</i>
Canadian	<i>Can.</i>	Physiology	<i>Physiol</i>
Character	<i>Charac.</i>	Proceedings	<i>Proc.</i>
Children	<i>Child.</i>	Psychiatry	<i>Psychiat.</i>
Chinese	<i>Chin.</i>	Psychoanalysis	<i>Psychoanal.</i>
Clinical	<i>Clin.</i>	Psychology	<i>Psychol.</i>
College	<i>Coll.</i>	Psychosomatic	<i>Psychosomat.</i>
Comparative	<i>Comp.</i>	Quarterly	<i>Quart.</i>
Consulting	<i>Consult.</i>	Religious	<i>Relig.</i>
Contributions	<i>Contrib.</i>	Research	<i>Res.</i>
Development	<i>Devel.</i>	Review	<i>Rev.</i>
Educational	<i>Educ.</i>	School	<i>Sch.</i>
Experimental	<i>Exper.</i>	Science	<i>Sci.</i>
General	<i>Gen.</i>	Social	<i>Soc.</i>
Genetic	<i>Genet.</i>	Statistics	<i>Stat.</i>
Indian	<i>Ind.</i>	Studies	<i>Stud.</i>
Industrial	<i>Indus.</i>	Teacher	<i>Teach.</i>
International	<i>Internat.</i>	University	<i>Univ.</i>
Italian	<i>Ital.</i>		

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THE JOURNAL OF SOCIAL PSYCHOLOGY

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- 2 A study of the effect of the environment upon the development of the human mind—J. W. BRIDGES, A. K. M. H. JONES
- 3 The influence of puberty practices upon mental growth—A. GIBELL

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- 1 The mind of a gorilla—R. M. YERKES
- 2 The role of eye
- 3 Family resemblances in mental test abilities—R. W. L. LUCHINS
- 4 Continuation in the locomotion of infants—L. H. BURNSIDE
- 5 The mind of a gorilla Part II Mental development—R. M. YERKES

VOLUME 3—January-June, 1927

- 1 An experimental study of the olfactory sensitivity of the white rat—J. R. TINGST
- 2 A photographic study of eye movements in reading formulae—M. A. TINKER
- 3 An experimental study of the East Kentucky mountaineers—N. D. M. HIRSCH
- 4 Responses of feral guinea pigs prematurely delivered—G. T. AVERY
- 5 The effect of the environment upon the development of the human mind—J. W. BRIDGES, A. K. M. H. JONES
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- 3 Determination of a content of the course in literature of a suitable difficulty for junior and senior high school students—M. C. BURCH
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- 1 General factors in transfer of training in the white rat—T. A. JACKSON
- 2 The effect of color on visual apprehension and perception—M. A. TINKER
- 3 The reliability and validity of maze experiments with white rats—R. LEPPER
- 4 A critical study of two lists of best books for children—F. K. SMITH-FLEWORTH
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- 1 Family resemblances in verbal and numerical abilities—H. D. CARTER
- 2 The development of fine prehension in infancy—B. M. CASTNER
- 3 The growth of adaptive behavior in infants: An experimental study at seven age levels—H. M. RICHARDSON
- 4 & 5 Differential reactions to taste and temperature stimuli in newborn infants—K. JENSEN

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- 1 A critique of stimulation in male: A study of forty superior and men—W. S. TAYLOR
- 2 A study of the nature, measurement and determination of hand preference—H. L. KOCH, et al.
- 3 The growth and decline of intelligence: A study of a homogeneous group between the ages of ten and sixty—H. E. JONES and H. S. CONRAD
- 4 The relation between the complexity of the habit to be acquired and the form of the learning curve in young children—M. I. MATTHEWSON
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On intelligence of epileptic children—E. B. SULLIVAN AND L. GANAGAN

A study of the play and childhood of the epileptic—D. A. CROCKETT

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Self, role, and satisfaction—A. L. BROPHY

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- 1 The constancy of personality ratings over two decades—R. D. TUDENHAM
Mother-son identification and vocational interest—L. H. STEWART
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Rorschach diagnosis by a systematic combining of content, thought process, and determinant scales—F. A. BOWER, R. TESTIN, AND A. ROBERTS
- 2 Longitudinal survey of child Rorschach responses: Older subjects aged 10 to 16 years—L. B. AMES
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The quantitative analysis of parent behavior toward psychotic children and their siblings—E. M. DONNELLY

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- 1 Make a sentence test: An approach to objective scoring of sentence completions—E. F. BORGATTA
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An investigation of trait relationships among six-year-old children—S. A. AVAKIAN

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- 2 Studies of role performance—J. H. MANN
A psychological assessment of professional actors and related professions—R. TAFT
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The biological roots of creativity—H. GUTMAN

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- 1 A Rorschach study of the development of personality structure in white and Negro children in a Southeastern community—A. C. PRICE
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Social and emotional adjustment during adolescence as related to the development of psychosomatic illness in adulthood—L. H. STEWART
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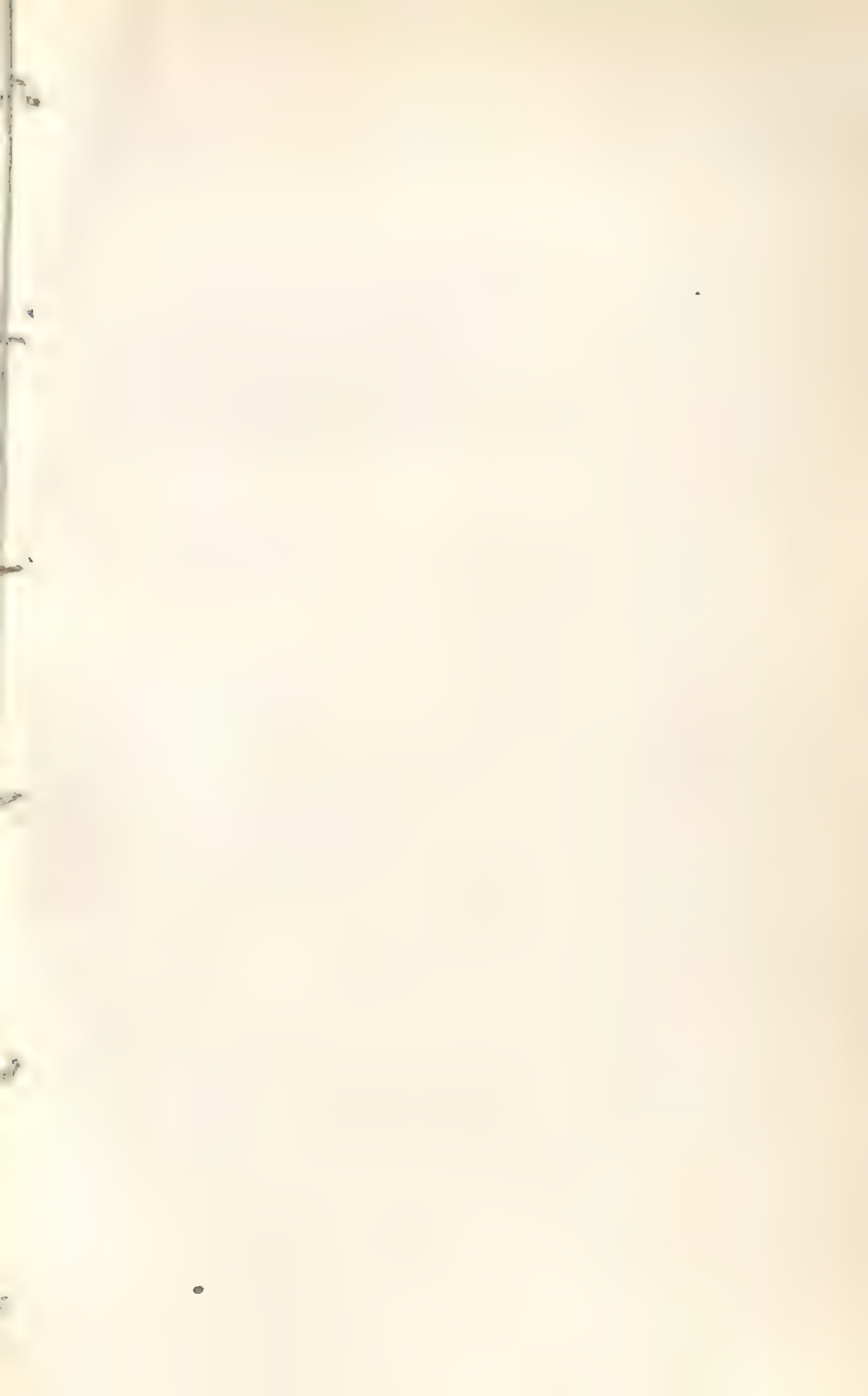
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Achievement gains or losses during the academic year and over the summer vacation period: A study of trends in achievement by sex and grade level among students of average intelligence—K. M. PARSLEY, JR., AND M. POWELL

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A study of the concept of the feminine role of 51 middle-class American families—A. STEINMANN

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- 1 Brain dynamism as reflected in illusions—G. K. YACORZYNSKI
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- 2 Sharing in preschool children as a function of amount and type of reinforcement—W. F. FISCHER
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2. Generalizations and conclusions should contain qualifying phrases or clauses which clearly suggest that only a portion of mankind has been sampled; for example, "among Americans," "when college students are tested," "in the case of European workers."

3. Analysis of results should be placed in the present tense only when there is no doubt that reference is being made to the subjects or informants of the investigation; otherwise the past tense is mandatory. "Group A is found to be more liberal than Group B"—the tense is correct because the data are at hand. But it may *not* be said that "A's are more liberal than B's" because thereby the spurious impression is created that all A's who have ever lived or will ever live have been or will be more liberal than B's, which may or may not be true.

* * *

To keep its backlog to a feasible minimum and to establish additional objective grounds for passing editorial judgment, the journal places a higher priority on cross-cultural and field research than on laboratory research employing college or university students; but this policy does not mean a commitment in advance to accept all cross-cultural and field studies nor to reject all laboratory studies.

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MODAL PERSONALITY OF YOUNG JEWS AND ARABS IN ISRAEL*¹

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ITAI ZAK

SUMMARY

While the pattern of basic personality dimensions which has been established in factor-analytic research is reasonably consistent across cultures, modes of responses to each dimension are often not. In the present study, the responses of 365 junior high school Israeli-Jewish boys and girls on the High School Personality Questionnaire (HSPQ) were compared to the responses of 353 Israeli-Arab children at the same grade levels. Discriminant analysis of the four subgroups (according to sex and culture) revealed that greater differences were found between the two cultures than between sexes. In the broadest terms, Jews scored lower on conformity, higher on toughness, and were found to be more group dependent than their Arab counterparts. The findings are discussed in terms of national character and cultural *vs.* constitutional differences.

A. INTRODUCTION

Cultural and group variations in personality factor level or mode of expression occur frequently. A central question is the following: To what extent do life conditions in a particular culture give rise to distinctive patterns of personality among its members? That is, does a sociocultural system produce its distinctive form of "modal-character"?

Because the psychological trend is to investigate general patterns of behaviors by controlling for specific social, cultural, or national influences, it is understandable why few attempts have been made to find the uniqueness of a particular group.

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¹ Thanks are due to Zipora Magen for helping in data collection and Aviva Shorek for her help in data analyses. The data were collected as a part of the national norming procedures for the HSPQ in Israel by the Center for Research and Consultation, School of Education at Tel Aviv University.

In the realm of personality measures, comparisons between nations have been mostly concerned with psychometrics: i.e., comparisons of factor structures in different populations and the like (4, 14). Only a few studies on personality variables have dealt with the question of national character. Some analyzed collective data (13), while others studied individual responses (7, 8, 10, 11, 15, 17, 19, 21). There is no doubt that sex differences in personality traits prevail throughout Western societies. [For the literature on sex differences with the High School Personality Questionnaire (HSPQ), see Cattell and Cattell (5).] Yet to limit the generalizability of these cross-cultural studies primarily to sex differences is to neglect the findings which emerge regarding different personality profiles in various countries.

We follow Cattell's definition of national, or population, character (3, p. 771) in which measured individual behavioral characteristics are considered rather than group characteristics. One may, of course, define national character as a particular way of looking at the coherence of culturally defined values and behavior patterns (parent-child or peer relations, as in some anthropological works). Such definitions, however, might turn out to be tautological (9). It is preferable to look at the national character in reference to personality patterns. In this sense, national character is equated with modal personality profile and it should empirically refer to the mode of the distribution of personality variables within a given society.

The study of national character requires representative samples (or at least comparable ones) of persons studied individually. Analyses of collective policies and products, such as rituals, institutional structure, and folklore, would seem to be supplementary to the primary study of individuals.

One way of assessing a modal national character is to compare it to other distinct groups (not national) which themselves have a modal character. These comparisons may help to identify patterns of attributes which are unique to specific national or cultural groups, as opposed to those which are more universal in nature. The design of this study follows the above form: comparison of the degree and nature of the agreement reached (or differences found) when population samples differ in certain systematic ways, notably sex, language, and culture (or nationality). The questions posed in this study are the following: What are the differences in personality traits between cultures (Israeli Jews and Arabs) and sexes? To what extent do personality traits account for culture differences in comparison to sex differences?

B. METHOD

The 1975 version of the HSPQ Form A was translated into Hebrew and Arabic, and back translation was used as a check for accuracy and equivalence. The rival hypothesis of translation inadequacies still exists, at least according to the rigorous demands of Brislin *et al.* (1) for adequate translation.

The instruments were administered to representative samples of 196 Jewish boys and 169 Jewish girls, and to 160 Arab boys and 193 Arab girls in grades 8 and 9 of junior high (compulsory) schools in Israel. Administration was done by guidance counselors in an ordinary setting of classroom test administration.

Jews were tested in all-Jewish urban schools, and Arabs in all-Arab schools. Both are located in various parts of Israel, but not in mixed areas.

The scoring followed the standard key—the position of items being the same in both translations. Factor B (the intelligence factor) was not interwoven with the other items, and was the same, with 16 items, as in the Hebrew version of the adult 16 PF. (The 16 best were representative of the 44 items given in the four adult forms.)

C. RESULTS AND INTERPRETATION

In order to test the main hypothesis, a four-group discriminant analysis was performed. Only two significant functions emerged. Table 1 presents the standardized discriminant function coefficients and related statistics for the two significant functions. In order to facilitate understanding, the standardized centroids were placed in Figure 1 on a two-dimensional space. The vectors of the standardized coefficients of the 14 personality traits were also inserted in the figure. This geometrical representation conveys information concerning how groups differ on the original variables, taking into consideration the intercorrelations among them. Specifically, each vector reflects the relative prominence of the trait in that group which scored highest on any particular trait.²

The plot of the group centroids shows that the first discriminant dimension (Y_1) separated by 1.0 *SD* (boys) and 1.5 *SD* (girls) between the two national groups. Jewish boys and girls were practically indistinguishable on

² The trait-vectors were computed as the correlations between the dependent (each trait) variable and the canonical variates. The resulting values were plotted with reference to vertical and horizontal axes (not shown in the figure) which passed through the origin as one might plot factor loadings.

the first dimension, though there were some differences between the two Arab groups. The second dimension (Y_2) discriminated between the two sexes, regardless of (or after controlling for) national affiliations. The difference is about two-thirds of an SD and still significant at the .001 level.

As can be seen in Table 1, the first canonical correlation between the 14 PF and group membership is .55 and the second one is .34, both significant at the .001 level. The overall discriminatory power is 39.67%, which means that almost 40% of the differences among the four groups is accounted for by the 14 personality traits [for the measure of the discriminatory power, see Tatsuoka (20)].

Let us first determine the relative contributions of the 14 original variables to group differentiation along each of the two dimensions.

By grouping the important variables in a somewhat meaningful order we obtain the following: Jewish boys and girls, compared to Arabs, scored lower on what is known as the conformity second order factor ($C-$, $G-$,

TABLE 1
STANDARDIZED DISCRIMINANT FUNCTION COEFFICIENTS AND RELATED STATISTICS FOR
THE FOUR GROUPS IN THE HSPQ

Trait ^a	Discriminant dimension	
	Y_1	Y_2
A—Outgoing	.169	.322
B—Bright	.605	.365
C—Emotionally stable	— .316	— .258
D—Excitable	— .007	— .134
E—Dominant	.341	— .270
F—Surgent	— .046	.001
G—Conscientious	— .256	.150
H—Venturesome	— .080	— .107
I—Tender-minded	— .317	.453
J—Individualistic	— .044	— .031
O—Apprehensive	— .038	— .303
Q ₂ —Self-sufficient	— .385	— .273
Q ₃ —Controlled	— .348	.057
Q ₄ —Tense	— .277	.370
Canonical correlation	.553	.342
Wilk's lamda	.601	.865
χ^2_{df}	317.91 ₄₂ **	90.07 ₂₈ **

Note: Statistically significant coefficients are underlined.

^a Only the high-score description for each trait is present.

** $p < .001$.

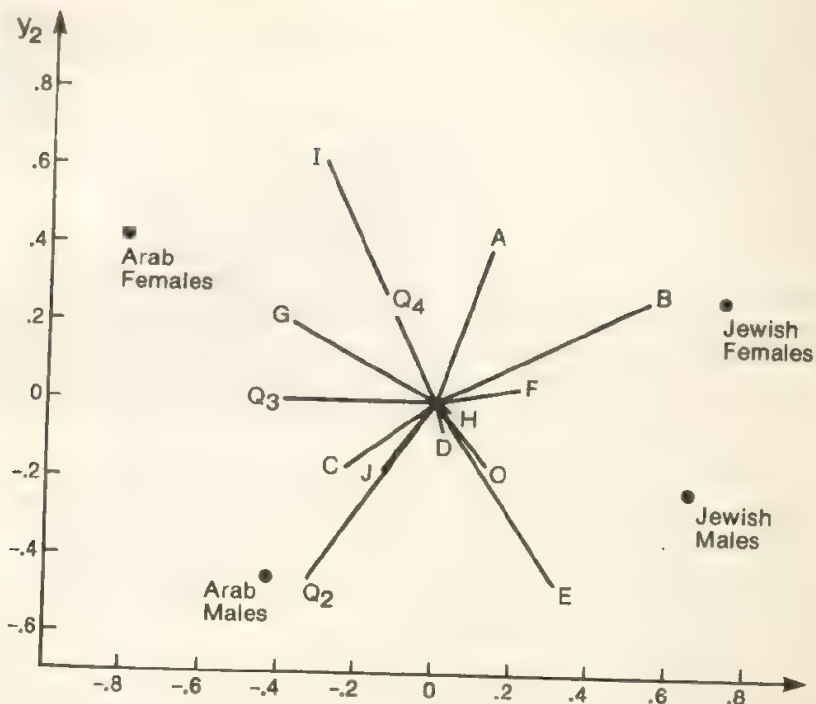


FIGURE 1
CONFIGURATION OF NATIONAL/SEX GROUPS WITH PERSONALITY-TRAIT VECTORS
PROJECTED INTO MODEL

The location of Centroids: Jewish boys = .65, -.21; Jewish girls = .73, .29, Arab boys = -.43, -.45; Arab girls = -.81, .42.

Q_3 -). They scored higher on toughness (or cortertia) second order ($E +$, $I -$) and they were more group dependent (Q_2 -), more relaxed (Q_4 -), and more intelligent ($B +$) than their Arab counterparts.

When national differences were controlled, females were separated from males by being more warm-hearted ($A +$) and group-dependent (Q_2 -)—part of the extroversion second order factor. Females were also higher on anxiety-related traits ($C -$, $Q_4 +$ but not on $O +$), lower in toughness ($E -$, $I +$), and higher on intelligence ($B +$).

The geometric model obtained by inserting trait vectors into the configuration of the national-sex groups, as shown in Figure 1, further facilitated interpretation. The group of Arab girls differed from the other groups by having relatively high levels of sensitivity ($I +$), tension (Q_4), and confor-

mity (G+). The group of Arab boys was characterized mostly by self-sufficiency (Q_2+) and emotional stability (C+). The group of Jewish boys had a high level of dominance (E+) compared to the other groups, and the group of Jewish girls was high on intelligence (B+) and warm-heartedness (A+). It should be emphasized, though, that the prominence of a trait is represented relative to the prominence of that same trait in other groups and not relative to the prominence of other traits in the same group. Failure to keep this fact in mind can lead to fallacious interpretations. For example, self-sufficiency (Q_2) may not be very prominent in any of the groups' profile, including the profile of Arab males. It appears as a lone vector because the prominence of this trait was relatively great in the Arab male group as compared with other groups. This does not mean that the group of Arab boys should be characterized as having higher levels of self-sufficiency than of other traits.

The overall *F* matrix among the four groups showed clearly that the differences between sexes in both groups were smaller (though statistically significant) than those between the two cultures within the same sex (*F*'s of 2.01 and 5.41 between boys and girls in the Jewish and Arab groups, respectively; and 7.15 and 13.42 between boys from the two cultures and between Jewish and Arab girls, respectively).

Although within the Jewish group there was a very small differentiation between sexes, the comparison may suggest that some of the significant differences between sexes were more constitutional while others were more cultural.

Cattell and Cattell (5) concluded that A+, G+, I+, on the one hand, and C+, E+, and Q_2+ , on the other hand, describe femininity and masculinity; but the present data indicate that at least C (ego strength) and G (superego strength) do not relate to sex differences. Where there were differences between sexes (such as on G) these differences were more culturally bound than constitutional.

It is also noteworthy that I did not differentiate sexes among Jewish adolescents in Israel, while this trait is found in samples throughout the world as the most sex-discriminating trait. (In Israeli adult samples I does differentiate between sexes, as well as C, but not G.)

Although it is tempting to suggest that the so-called masculinity/femininity traits are more culturally bound than they are customarily thought of, it is probably unnecessary to speculate on the causes of such findings, at least until more data are available.

Other studies (2, 3, 16, 18) suggest that the personality pattern of

conformity may stem from the cultural climate of traditional Arab society which promotes rigid conformity to traditional values, such as good manners and obedience to family elders. In contrast, the tendency in the Jewish society (at least in Israel) is toward moral autonomy (17) and toward a stronger emphasis on the welfare of the group and of the state above that of the individual (6, 12). Such daily life behaviors may explain the lower superego strength ($G--$) and the higher group dependency (Q_2--), as well as the dominance ($E+$) in the Jewish sample.

As we have seen, national differences took precedence over sex differences, at least in the present Israeli adolescent samples. Thus, the findings (though limited in age range and sampling procedures) lend support to the hypothesis of a "national character." The inclination toward stereotyping and spurious homogenizing in the description of the two cultures should be avoided. The variability within each sample should be remembered. Our first concern is not the "uniqueness" of a given society but rather the characterization of each sample in terms of psychological importance and sociocultural relevance. It is not surprising that six of the 14 personality traits differentiated in both of the criterial groups: that is, in characterizing the two cultures *and* in characterizing the sexes. Moreover, four traits were found to play no significant role in any differentiation; the remaining four traits differentiated in only one of the two categories. The results obtained in this study (and probably in any study of national characters) may contribute to our understanding of both what is distinctive in single nations and what is relatively universal in human society.

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BELIEFS ABOUT EQUAL RIGHTS FOR MEN AND WOMEN AMONG ISRAELI AND AMERICAN STUDENTS*

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SUMMARY

Two hundred and forty-six applicants to the University of Haifa (136 males, 110 females) responded to a Hebrew version of the Beliefs About Equal Rights scale (BAER). Mean scores for males and females were compared to results reported for a sample of American students. Israeli Ss had significantly higher scores on the BAER when compared to U. S. Ss. The effect of prominent female political figures and ideals of equality in work were noted as contributing to this cultural difference. Within the Israeli sample, women were more egalitarian than men, kibbutz members were not more egalitarian than others, and the more religious held the least egalitarian beliefs.

A. INTRODUCTION

There has been considerable research in the United States in the general area of attitudes toward equality between men and women (7, 8, 11). In Israel, this area has been discussed in different contexts (3, 5, 9), but basic quantitative data on beliefs toward sexual equality have not been collected.

There are several historical factors which have contributed to the formation of contradictory beliefs about equality for men and women in Israel. Traditional Judaism relegates women to a secondary position and limits their rights in its ritual and legal systems, while Judaic tradition elevates the woman's position as a wife and mother (4). Socialist Zionism, as a movement breaking away from traditional Judaism, has been committed to an egalitarian ideology. The formation of the kibbutz subculture is representative of the influence of that ideology. However, the kibbutz now combines a declared ideology of equality with a rather traditional division

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¹ Requests for reprints should be sent to the first author at the address shown at the end of this article.

of sex roles (2, 13). As women on the kibbutz worked predominantly in service areas and men in production areas, the respective status of the sexes changed with their work assignments (9). The ideals of Zionism and the laws of traditional Judaism are both reflected in Israel's social legislation. Progressive legislation passed in 1964 and 1968 bars discrimination based on sex and protects the rights of the working women (1). However, marriage and divorce proceedings in Israel are handled by religious courts which do not grant women equal status.

An important factor affecting all aspects of life in Israel is the constant and high state of military readiness maintained by Israel. It has been suggested (12) that in this situation, one might expect classic differences between high-status male protectors and low-status female protectees. In present day Israel, women serve in the Army in traditional female roles (i.e., secretary, clerk), rather than combat roles, and are not involved in reserve duty or military service after childbirth. The influx of varied immigrant groups is another factor to consider in the development of Israeli beliefs. In the past 30 years, Israel has absorbed immigrants from varied cultures with wide-ranging views on the status of women. In contrast to the Central European progressive tradition, immigrant cultures from Near Eastern Islamic countries emphasize patriarchal arrangements with male domination (4).

The purpose of the present study was to measure beliefs about equal rights and opportunities for men and women in Israel as compared to the United States. In addition, where practical, the influence of the above cultural factors within Israeli society was also measured.

B. METHOD

1. *Subjects*

A total number of 246 applicants to the University of Haifa took part in this study, 136 males and 110 females. Range of ages was 18-38 with an average age of 23.2. All were high school graduates. They were either born in Israel or had been in Israel for the last 10 years. They responded to the questionnaire anonymously.

2. *Variables*

The instrument employed to measure the dependent variable was a Hebrew version of the Beliefs About Equal Rights scale (BAER) which was developed in the United States by Jacobson, Anderson, Berleitch, and

Berdahl (6). The Hebrew version, as well as the American, consists of 28 items, of the "true-false" type. Twenty-five items were translated by content and in exact wording into Hebrew. The other three had to be slightly changed because of obvious cultural differences (items 13, 18, 26); statistically, these changes did not create any biases.

The reliability (KR-20) of the Hebrew version of BAER was .79 as compared to .86 of the BAER in the American sample. All the items except one (item 26) had point biserial correlations with the total score that were significant beyond the .01 level. The average score for the sample described above was 19.18 ($SD = 4.65$) out of a maximum of 28.

The independent variables and their categories within the Israeli samples were (a) Sex: males, females; (b) Age: 18-22, 23-38; (c) Religious Belief: nonreligious, traditional, orthodox; (d) Residence: city, small town, village (moshav), kibbutz.

C. RESULTS

The results of the Israeli samples (males and females) were compared to the American as reported by Jacobson *et al.* (6). The Israeli male mean was 18.16, and the American male mean was 16.03 ($p < .001$). The Israeli female mean was 20.45 and the American female mean was 19.56. Higher score on BAER means a stronger belief in equality between men and women. Among the males, the Israeli Ss had, as a group, higher scores on the BAER. Among the females, the same trend exists, but the difference is not statistically significant.

As might be expected, in light of these figures, on most of the items the Israeli Ss responded in a more egalitarian way. However, in several items the general trend was reversed and in four of them the reversal was statistically significant ($p \leq .05$).

An analysis of variance (fixed model) was employed in order to investigate the effects of the four independent variables (sex, age, degree of religious belief, residence) and their two-way interactions, on the dependent variable (BAER Score). Only two independent variables were statistically significant: sex and degree of religious belief. The females' mean score was 20.45 ($n = 110$) compared to 18.16 for males ($n = 136$), $F = 15.816$, $p < .001$. The mean score for the nonreligious subsample was 19.79 ($n = 184$); for the traditional subsample, the mean score was 17.54 ($n = 49$); and for the orthodox group it was 16.77 ($n = 13$), $F = 6.208$, $p < .002$.

D. DISCUSSION

Israeli males showed greater equality beliefs than did males from the American sample. While this result was found on most items, two trends could be discerned. The first dealt with the capability of women in political positions and included, for example, "I would vote for a qualified woman for President." (For clarity all items in this section are presented in the egalitarian direction.) The concrete model of major female political figures is seen as the basis for the difference in the U. S. and Israeli samples.

The second trend reflected more egalitarian attitudes toward fellow workers and was noted in such items as, "In traditional marriages if the woman does all the housework, she should be paid a fair salary for it" and "Women should not work mostly in 'feminine' occupations, such as nursing or teaching." These items were seen as reflecting the original Zionist socialist ideology which emphasized the value of equal work for men and women. It is noted (1) that Israeli men have higher income levels, higher status jobs, and more university permanent and training positions than Israeli females. Thus, this trend may reflect a generalized attitude, which is not congruent with the woman's actual work position.

In the case of the several items where the general trend was reversed so that Israelis advocated the less egalitarian position, military subjects were often the major topic, such as "Women should have the same opportunities to serve in the Armed Forces that men do." As noted earlier, this item has a different meaning in Israel, since most women serve in the armed forces, but the service is along traditional sex-role lines (i.e., women in clerical jobs). Thus, military service for women in Israel reinforces traditional sex-role divisions. This paradoxical finding should be noted, since the drafting of women in Israel is often seen as a measure of equality. It indicates that division along sex lines in a framework of general (and equal) conscription does not lead to more egalitarian perceptions.

Within the Israeli sample, females believed in greater equality for the sexes than did males. This is consistent with the findings for the American sample using the BAER (6). Women's beliefs were particularly stronger than males' in the areas of leadership and work roles as reflected in such items as "A woman can do any job a man can do" and "Leadership of our country and communities should not remain in the hands of men."

In the Israeli sample, place of residence was not related to different attitudes on male-female equality. When the effects of other demographic variables were partialled out, the net effect indicated that individuals from

the kibbutz were not significantly more liberal than nonkibbutz members. In the area of sex roles, the egalitarian traditions in the kibbutz would appear not to be stronger than in the general population. This is consistent with more recent studies of sex-role stratification on the kibbutz (9, 10).

Strength of religious belief was related to egalitarian attitudes; those who observed Jewish law most strictly were least liberal and those who reported not observing a religious code were most liberal. As noted earlier, Jewish law clearly prescribes status differences between men and women. The findings may reflect this cultural characteristic.

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SEX DIFFERENCES IN SOCIALIZATION ANXIETY*

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SUMMARY

Cross-cultural ethnographic data on 106 pre-industrial and industrializing societies were used to test seven hypotheses about sex-linked differences in modal levels of socialization anxiety observed among children. Five of these hypotheses were supported, demonstrating that boys displayed significantly higher overall levels of socialization anxiety than girls, girls exhibited significantly lower levels of anxiety related to achievement, independence, and self-reliance training than boys, and, finally, a higher level of anxiety, associated with nurturance training occurred among girls than boys. Of the two remaining unsupported hypotheses, data were in the predicted direction for both (girls exhibited higher levels of responsibility and obedience anxiety than boys), however, the differences failed to reach significance.

A. INTRODUCTION

The question of sex differences in general anxiety has spawned a relatively large body of research (13, pp. 184-190), but as yet no studies have treated the more specific question of sex differences in socialization anxiety directly. The concept of socialization anxiety derives from the early work of Davis (9), and Barry, Bacon, and Child (3), and refers to "the modal level of anxiety induced in male and female children in a given society . . . as a result of nonperformance (or incomplete performance) of age-appropriate, role-related demands" (32, p. 34). Such anxiety can be viewed as being intimately tied to extant patterns of sex-role differentiation displayed by members of a society, for any clearly differential emphasis on transmitting specific value behavior constellations to children on the basis of sex is likely to produce correspondingly differentiated patterns of anxieties associated with competent/incompetent role performance.

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Although they did not examine sex-linked patterns of socialization anxiety specifically, Barry, Bacon, and Child (2) were among the first to demonstrate with cross-cultural data the degree to which child training processes were stratified by sex. In particular, it was clear that value/behavior constellations, such as achievement and self-reliance, were most frequently stressed in the training of boys, while a greater emphasis was placed on the inculcation of nurturance and responsibility for girls. Value/behavior constellations focusing on obedience, however, were emphasized nearly equally for both sexes in most societies. This sex-linked variability of emphases in value transmission suggests, perhaps, that child socialization anxiety may display a similar patterning.

More directly, Welch (32) has demonstrated recently that modal societal levels of socialization anxiety do vary (although the variation is not highly significant) in relation to the economic subsistence patterns a society exhibits. He also noted modal levels of overall anxiety were higher for male than for female children, but no direct test was performed to assess the statistical significance of these differences. Other studies (1, 8, 10, 12, 14, 29) have also reported significant sex-linked differences in anxiety for children and adults, with females scoring more highly on generalized anxiety than males. Most of these studies utilized standard measures of anxiety (e.g., Children's Manifest Anxiety Scale, General Anxiety Scale for Children, Taylor Manifest Anxiety Scale, and the Anxiety Subscale from the MMPI) and a few examined these anxiety differentials for French (8), Greek (29), and Japanese (12) samples. However, while suggestive, none of these studies focuses directly on socialization anxiety and its specific dimensions.

Given the relatively clear evidence that indicates child socialization processes emphasize achievement (2, 11, 28), dependence/independence (2, 7, 15, 16, 20, 23), nurturance (2, 19, 26, 33), and other value/behavior constellations differentially, and that the outcomes of these processes are manifested in attitudinal and behavioral differences between sexes in achievement [males more achievement-oriented (2, 22, 27)], compliance/obedience [females more compliant/obedient (2, 4, 6, 24)], dependence/independence [females less independent (2, 15, 19)], nurturance [females more nurturant (2, 26, 33)], responsibility [females higher in responsibility (2)], and self-reliance [males higher in self-reliance (2)], it seems reasonable to infer that specific sex differences in patterns of socialization anxiety may also exist. In particular, this past research suggests that females may display higher mean levels of nurturance, obedience, and responsibility-related anxiety than males, while males exhibit higher levels of achieve-

ment, independence, and self-reliance anxieties; and, secondly, males display higher mean levels of overall socialization anxiety than their female counterparts.

The purpose of the present paper, then, is to examine sex-linked differences in socialization anxiety among children in a variety of societies (pre-industrial and industrializing types) and to test explicitly the following seven hypotheses culled from the previously cited literature on child socialization: (a) mean levels of achievement anxiety will be higher for male than for female children; (b) mean levels of independence-related anxiety will be higher for males than for females; (c) female children will exhibit higher levels of anxiety related to the performance of nurturant behavior than will male children; (d) females will also display higher aggregate mean levels of responsibility-related anxiety than males; (e) male children will display higher mean levels of anxiety about self-reliance than female children; (f) females will exhibit higher mean levels of anxiety associated with compliant or obedient patterns of behaviors; (g) male children will display higher mean levels of overall socialization anxiety than females.

B. METHOD

1. *Sample*

The present study uses ratings of childhood socialization processes compiled originally by Barry, Bacon, and Child (3). One hundred-six of the 110 societies represented in their original sample were included in the data set.¹ This sample comprises societies from Africa ($N = 28$), East Asia ($N = 11$), Oceania ($N = 26$), North America ($N = 29$), and South America ($N = 12$). All societies were industrializing or were pre-industrial in character, and the basic economic subsistence patterns displayed in the sample appear to be distributed similarly to those reported in Murdock (17).

Given recent evidence that previous concern over the severity of diffusional effects ("Galton's problem") in cross-cultural research appears to have been unwarranted (25, p. 432; 18, p. 220), no attempt was made to select societies on the basis of geographical separation. Instead, we have used the largest, most varied cross-cultural sample available. Such a strategy is, of course, in accord with procedures suggested by no less an authority than Murdock (18, pp. 218-219).

¹ Readers may note the differences in sample size between this study and an earlier study using the same data (32). In the earlier study (32), more than 20 societies had to be dropped from the analysis because they could not be coded unambiguously as to the primary subsistence mode they displayed. Because we have not focused on the subsistence variables in this study, it was possible to use a slightly larger sample size.

2. Ratings

The measures of socialization anxiety used in this study represent modal levels of anxiety induced in boys and girls in a specific society as a result of nonperformance (or incompetent performance) of various age-appropriate, role-related demands (3, 32). These ratings of cultural socialization anxiety were made separately for males and females by Barry *et al.* (3) and reflect the levels of anxiety associated with the transmission of the following basic value-behavior constellations: achievement, independence, nurturance, obedience, responsibility, and self-reliance. All six measures of socialization anxiety have been used, and their original 14-point rating scales have been retained.

In addition, composite measures of overall socialization anxiety were computed for girls and boys. The measures were formed by taking the mean of the six societal anxiety ratings described above and, again, both used 14-point scales. These two measures were included in the study to provide a summary indication of the general levels of anxiety induced in children as a concomitant of child training.

C. RESULTS

Because observations on the dependent variables were made within the same society separately for boys and girls, a matched-pairs design was used to assess mean differences in socialization anxiety attributable to the effects of sex.² Thus, observations on girls and boys were paired by societies; a difference score was calculated for each successive pair (5, p. 233); and finally, the mean of these difference scores was computed (5, p. 233). The null hypothesis representing no differences in socialization anxiety between girls and boys was then tested by comparing the obtained mean difference score with the hypothesized population mean difference score of zero. A one-tailed *t* test was used to assess the statistical significance of the differences.

As can be seen from Table 1, five of the seven specific hypotheses presented earlier in this paper are supported by the data, while the remaining two are not.

First, as Welch's (32) earlier study suggested, modal levels of overall

² The ratings of socialization patterns and outcomes generated by Barry *et al.* (3) were obtained from ethnographies in which observations on boys and girls of similar ages were made usually within a single village. These observational procedures increased the likelihood male-female subsamples are effectively matched on relevant variables outside the purview of this study.

TABLE 1
DIFFERENCES IN SOCIALIZATION ANXIETY FOR BOYS AND GIRLS
IN PRE-INDUSTRIAL SOCIETIES

Hypothesis tested	Dimensions of socialization anxiety	Girls		Boys		t
		\bar{X}	SD	\bar{X}	SD	
H ₁	Achievement	5.873	2.081	7.629	2.654	10.646*
H ₂	Independence	5.134	1.893	6.753	2.074	12.244*
H ₃	Nurturance	7.022	1.872	6.429	1.528	5.465*
H ₄	Responsibility	6.695	2.741	6.437	2.983	1.428
H ₅	Self-reliance	5.485	1.969	7.433	2.257	12.049*
H ₆	Obedience	9.020	2.805	8.868	2.997	1.336
H ₇	Overall	6.538	1.529	7.258	1.633	-8.934*

* $p < .001$.

socialization anxiety seem to be higher among boys than among girls (H₇). Secondly, as predicted, societal levels of achievement anxiety and self-reliance anxiety appear to be significantly higher for boys than girls (H₇ and H₅); girls tend to exhibit higher levels of nurturance anxiety than boys (H₃); and the boys' mean for independence anxiety is higher than the mean displayed by the girls across a variety of societies (H₂). Both of the remaining findings coincide with predictions, but in neither case are the predicted differences large enough to reach significance. For example, the mean rating for modal responsibility anxiety is higher for girls than for boys, and thus is in the direction hypothesized; however, earlier research (1) seems to have greatly overestimated the degree to which this type of anxiety is sex-linked, for the difference of means is not statistically significant. Secondly, the mean girls' score for obedience anxiety is higher than the mean boys' score, and thus also in the predicted direction, but again these mean scores do not differ significantly.

D. CONCLUSION

These results suggest that the stratification of childhood socialization processes by sex generates differentiated patterns of sex-linked anxieties about role-appropriate behavior. Such patterns of anxiety obviously reflect value/behavior constellations transmitted to boys and girls in various cultures and the particular sex-linked character of social scripts children are expected to internalize and enact. Thus, despite contentions based on evidence drawn from a limited number of societies (13, pp. 187-188) that girls and boys differ little in levels of general anxiety, a wider range of cross-cultural evidence suggests that children do exhibit both general and

specific types of anxiety differentials which reflect basic cultural sex role demands transmitted in early childhood.

These findings support past descriptions (21, 30, 31) of childhood sex-role training as exercising pervasive and enduring effects on the self-image, interpersonal competencies, attributional processes, and basic motivational patterns displayed by children. It is not difficult to infer, too, that the effects of such a comprehensive sociopsychological process extends also to the socially induced, differentiated anxieties children experience within all societies.

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ALTRUISTIC RESPONSES UNDER CONDITIONS OF ANONYMITY*¹

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SUMMARY

The effect of anonymity on altruistic responding was examined by means of the "lost letter" technique. *SS* were 99 male drivers and 106 female drivers who parked their cars in shopping centers. A sealed letter with a note attached made it appear that someone had mistaken the *S*'s car for the car of a person to whom the letter was addressed. The return of letters served as the measure of altruism. Contrary to previous research involving face-to-face interactions: (a) females assisted females more than males assisted females; (b) bad news was delivered sooner than good news, (c) the presence of others did not inhibit helping.

A. INTRODUCTION

Altruism studies in the United States have ranged from situations in which the helper and the person helped interact face-to-face (3, 4) to anonymous situations in which the helper and the helped never meet (1, 2). Altruistic responses may differ in moving from interactive settings to situations in which a potential helper is able to remain anonymous. Deaux (2, p. 65) has suggested that the "conditions determining altruistic behavior may not be identical when moving from the identifiable to the anonymous situation." Benson *et al.* (1) have suggested that the "cloak of anonymity" may provide immunity from the cost of not helping.

The lost letter technique provides an unobtrusive measure of helping behavior in which there is no history of interaction between the helper and the helped and no likelihood of future interaction. Variables previously studied in interactive settings can be examined under conditions of

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anonymity by the use of this method. For example, studies that involved face-to-face interactions have indicated that males help more than females and/or that females are helped more than males (3, 4). However, in the noninteractive situation of lost letters (2) or lost graduate school applications (1), no sex differences were found.

When Ss were in a position to deliver personally good news or bad news, Rosen and Tesser (6) have indicated that persons are more reluctant to deliver bad news than good. Deaux (2), however, noted that in the anonymous condition of mailing a good news postcard or a bad news postcard that the "emotional contagion" of an interaction was eradicated; in such a situation, both good news and bad news were just as likely to be delivered.

The lost letter technique can be extended to examine the effect of the presence of others on helping a person who is not present. Previous studies of interactive settings have indicated, that the presence of others inhibits helping (4, 5). With the opportunity to help a relatively anonymous person, only the bystanders and not the potential recipient would be able to provide social reward or punishment.

B. PROCEDURE

1. Subjects

The Ss were 205 adults who parked their cars in shopping center parking lots in Lafayette, Louisiana, between 9:00 a.m. and 3:00 p.m. on two Saturdays. Of the drivers, 99 were male and 106 were female. A total of 48 blacks and 157 whites were Ss. Ninety-five cars each had one occupant, 73 cars each had two occupants, 26 cars each had three occupants, and 11 cars had four or more occupants each.

2. Method

The *E*, sitting unobtrusively in his own parked car, observed cars as they drove into the parking lot. As occupants got out of their cars, the *E* recorded the sex and race of the driver, as well as the number of others in the car. Children estimated to be under 13 years of age were excluded from the number of occupants of the vehicle. After the *S* had walked into the shopping center, the *E* placed a "misplaced" letter under the windshield wiper on the driver's side of the *S*'s car. The *E* was careful not to place letters on cars parked closely together, so that drivers, as they returned to their cars, would not see that other cars held letters.

3. Target Stimulus

The letter was a 4" by 9" white envelope. All letters were sealed and stamped, but none had been postmarked. All letters were addressed to an out of town address, so that no one would deliver the letter personally. The envelopes contained blank sheets of papers.

Half of the letters were addressed to Joan Bihm, while the other half were addressed to John Bihm. Within each sex condition, half apparently contained good news, while the other half contained bad news. Attached to each letter was a handwritten message written in pen on a 5" by 7" piece of paper. The message read "Dear Joan (John), I was going to mail this letter to you, but I saw your car in the parking lot. It contains some *Good News* (*Bad News*), so I thought you should have it right away. Mary (Bill)." In order that the sex variable not be confounded, the sex of the person who had apparently misplaced the letter and the sex of the person to whom the letter had been addressed was the same.

The *E* placed letters on cars until each cell of the 2 (male \times female helper) \times 2 (male \times female letter) \times 2 (good \times bad news) \times 2 (alone \times group) factorial design had a minimum of nine Ss.

C. RESULTS

Table 1 indicates the number of letters distributed per cell and percentage returned per cell. The data were analyzed with a $2 \times 2 \times 2 \times 2$ multidimensional contingency table (8).

Of the 205 letters distributed, 126 were returned for a return rate of 61.46%. The highest return rate was for female "good news" letters by

TABLE 1
PERCENTAGE RETURN OF LETTERS AND NUMBER DISTRIBUTED WITHIN CONDITIONS OF
SEX OF LETTER \times TYPE OF NEWS \times SEX OF HELPER \times PRESENCE OF OTHERS

Helper	Male				Female			
	Good	Bad	No.	%	Good	Bad	No.	%
Male								
Alone	50.0	10	61.5	13	44.4	9	41.7	12
Group	53.3	15	58.3	12	33.3	15	61.5	13
Female								
Alone	80.0	15	76.9	13	80.0	10	76.9	13
Group	50.0	12	41.7	12	88.9	18	69.2	13

female drivers in a group (88.89%), the lowest return rate was for female 'good news' letters by male drivers in a group (33.33%).

Significantly more females helped than males (71.7% *v.* 50.5%, $\chi^2 = 9.71$, $p < .01$). However, there was no difference between females who were alone as compared to males who were alone in offering assistance (78.43% *v.* 63.93%, $\chi^2 = 2.81$, *n.s.*). Also, there was no difference in the return of male letters (59.8%) as compared to female letters (63.1%).

The only significant interaction effect was found for sex of helper \times sex of letter ($\chi^2 = 4.044$, $p = .05$). This was due to the high return of female letters by female helpers (79.62% *v.* 56%, $Z = 2.659$, $p < .05$). The return of female letters by female helpers was also higher than female letters returned by males (79.62% *v.* 44.9%, $Z = 3.88$, $p < .01$).

The greater return of female letters by other females might have been confounded by the presence of others. One might justifiably argue that one cannot be sure who in a group actually mailed the letter. However, a separate analysis examining the interaction effect of sex of helper \times sex of letter for males and females who were alone proved significant. The return rates were as follows: (a) alone males male letters: 56.52%, (b) alone males female letters: 42.86%, (c) alone females male letters: 78.57%, (d) alone females female letters: 78.26% ($\chi^2 = 6.12$, $p < .05$).

Although the return of good news (61.5%) did not differ from the return of bad news (61.4%), a significant difference occurred when the latency of return for the two conditions was examined. The mean postmark date for bad news letters was 2.78 days after the date of distribution ($n = 51$, due to illegible postmarks on some of the letters). The mean postmark date for the good news letters was 3.5 days after the day of distribution. A point-biserial correlation of latency of return for type of news was significant ($r_{pb1} = .25$, $t = 2.80$, $p < .01$).

Concerning the effect of the presence of others, persons alone were just as likely to mail letters as persons in groups (65.26% *v.* 58.18%).

D. DISCUSSION

The results tend to support Deaux's (2) hypothesis that in moving from an identifiable situation to an anonymous one, altruistic responses may differ. For example, the significantly greater assistance rendered by American females in shopping center parking lots is counter to several previous studies involving face-to-face interactions (3, 4). Likewise, the finding that females were more likely to help other females than males were likely to help females is unusual. Latane and Dabbs (4) have found that males are

more likely to help females in a face-to-face situation. They have proposed three possible explanations for their findings which can be useful in interpreting the greater help given by females to other females in the present study. They first suggest that helping is motivated by a desire to adhere to norms, "the violation of which may lead to guilt, lower self-esteem, and remorse, and if public, may lead to social sanctions" (4, p. 190). Conceivably, in the case of lost letters placed on cars and the anonymity such a situation affords, men did not display such a great need to adhere to chivalrous norms. Another possible explanation by the two authors would be that one acts in an altruistic fashion in order to gain gratitude from the person helped. Men might find gratitude from a female a particularly rewarding experience, but men can get no such expression from a lost letter. Finally, females might be seen simply as less capable of performing the task in question and in more need of help. However, in the present situation both sexes were probably seen as equally dependent and caught in the same unfortunate situation.

In the case of the quality of the news delivered, the equal return of bad news and good news agrees with Deaux's (2) findings. However, when the latency of mailing good news is compared to bad news, one finds that persons mailed bad news sooner than good news. This finding is directly opposite to that of Rosen and Tesser (6), which involved a reactive setting. One might hypothesize that when the emotional costs of delivering bad news to someone are removed, one is more likely to deliver the bad news before the good. Ss did not know the exact nature of the news, therefore, the variable of good vs. bad news might have been confounded with the variable of importance (2). Ss might have made the assumption that the bad news condition contained important news and "could not wait," it being demonstrated that persons are more likely to deliver important than unimportant information (7).

Although the presence of others did not inhibit helping, it is important to note that the potential helper was among a group of friends or family. Latane and Rodin (5) found that the percentage of help given by one person was the same as help given by a two-person group of friends. Presumably, the presence of friends (or family) in the car made the likelihood of responding the same as if one were alone. Also, the fact that only one helpful act was necessary (only one person had to mail the letter) would lead to a situation of preemption, in which no further help would be required.

The situation of anonymity seems to be a new variable in the search for

the situational determinants of altruism. However, this study and the literature upon which it is based rests exclusively on research done in the United States; cross-cultural differences of responses to the anonymous condition have yet to be examined.

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A STUDY OF NONVERBAL COMMUNICATION AMONG JEWS AND PROTESTANTS¹

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SUMMARY

This study explored the nonverbal communication of Protestant Americans (Episcopalians) of Anglo-Saxon descent and American Jews. Conducted in Jewish synagogues ($n = 164$ males and females) and Episcopalian churches ($n = 160$ males and females), the investigation examined the distance and axis at which communicators interacted and the types of gestures and tactile behavior conversants displayed. Few significant differences were found between Jews and Protestants; accordingly, nonsignificant statistical trends were reported in addition to the limited number of tactility and gestural scores that were significantly different. Genders did not differ significantly on distance, axis, and tactility. Significant differences were found between men and women on gesticulation.

A. INTRODUCTION

Generalizations abound regarding the communication patterns of cultural and religious groups. Italians, for example, are supposed to be lively and effusive. Germans are reported to be stoic and controlled, and Scandinavians are presumably soft-spoken, "endowed with an aristocratic power of self-restraint" (13, p. 67). Similarly, Jews have been characterized as aggressive, emotionally expressive, and loquacious (2), while Protestants of Anglo-Saxon origin are often portrayed as passive, restrained, and taciturn (3). Though accepted by a sizeable segment of the populace (11, 17, 18, 19) generalizations that describe the communication behavior of cultural and religious groups have been examined infrequently by researchers (4, 6, 14, 19). In fact, no reported study has systematically

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explored the nonverbal communication patterns of Protestant Americans of Anglo-Saxon descent and American Jews, the religious groups examined in this investigation.

Despite the absence of substantive data, investigators have written at length about the nonverbal idiosyncracies of the Jew and white, Anglo-Saxon Protestant. It has been argued, for example, that Jewish communicators are more tactile, stand closer and more directly than do most Gentile conversants (15, 16). In discussing the etiology of these nonverbal behaviors, researchers have suggested that Jews are either innately more emotionally expressive than Gentiles—"a characteristic that has made them (Jews) born actors" (13, p. 673)—or that the "deep and unremitting care" Jewish children received from a "Jewish mother" has made Jews "tactually very demonstrative" (15, p. 263). In contrast, Protestants of Anglo-Saxon origin have been described as "staid," "proper," and "rigid" (9, 20), a "noncontact people" (15, p. 264) who are trained as children to display considerable emotional restraint and thus, supposedly, prefer communicating at "large interpersonal distances" (16, p. 88). Unsubstantiated by convincing quantitative or qualitative data, speculations about the distance and tactility patterns of Jews and Protestants appear to be derived from unfounded group generalizations, stereotypes, essentially, that rigidly define each religious group's social-psychological traits.

It has also been reported that Jews and Anglo-Saxon Protestants have substantially different gesture patterns. Traditionally, Jews have been characterized as "having a taste for gesture and a fondness for the spectacle of variegated movement" (10, 13, p. 673), whereas Protestants are supposedly "taught not to gesticulate because it looks foreign or impolite" (16, p. 88). The only incisive evidence in the literature supporting these characterizations has been offered by Efron (6), an anthropologist.

In a classic study on gesticulation, Efron found that Eastern European Jews who did not assimilate into American society ("traditional Jews") gestured often, using confined hand and arm movements near the face and chest, while many "assimilated" American Jews gestured expansively and infrequently—traits also shared, according to Efron, by Protestants of Anglo-Saxon origin "among whom gesture is controlled by education and social censure" (7, p. 149). No reported research has rigorously examined Efron's findings even though he did not precisely define or systematically measure the characteristics of assimilated or traditional Jews. He also failed to provide cogent data to support his frequent observations about gesticulation among Protestants and neglected to use tests of significance to analyze quantitative data.

For the present study, Episcopalians of Anglo-Saxon descent and American Jews were systematically examined to determine their distance, axis, tactility, and gesture patterns. Derived from the Church of England, the Episcopal Church of America was selected as a research site because there was a reasonably high expectation that a significant proportion of the Ss would identify themselves as being of British extraction [Anglo-Saxon descent (1)]. Similarly, Jews in reform and conservative synagogues were observed, since there was a high probability that the Ss were of the Jewish faith. Instead of posing hypotheses, several research questions were developed.

1. Do Episcopalians and Jews differ significantly in the types of gestures they display?

2. Do Episcopalians and Jews differ significantly in the type of tactile behavior in which they engage and the distance and axis (angle) at which they interact?

3. Do males and females differ significantly in the types of gestures they display?

4. Do male/male, male/female, and female/female pairs differ significantly in the type of tactile behavior in which they engage, and the distance and axis (angle) at which they interact?

B. METHOD

1. *Subjects*

Conducted in the field, the study examined two-person groups in which the conversants were between 18 and 50 years old, involved in face-to-face conversation, and free of objects that might limit gesticulation or physical contact. Ss were interviewed at the end of each day's research to determine conclusively their ages and ascertain (a) whether Episcopalians were of Anglo-Saxon origin and (b) whether Ss in synagogues were of the Jewish faith and at least second generation Americans. Eliminated from the sample were interactants in synagogues who were not of the Jewish faith and Episcopalians who were not of Anglo-Saxon descent. The mean age for Episcopalian Ss ($N = 80$ pairs) was 41, and the average age among Jews ($N = 82$ pairs) was 43.

2. *Procedure*

The research was executed over a six-month period in selected Jewish synagogues and Episcopalian churches in the Milwaukee metropolitan area. Located in white, middle-class neighborhoods, each church and

synagogue had a sizeable congregation that attended religious services regularly.

To gain access to each institution, a clergy member was asked if five university students studying theology could attend religious services to facilitate their understanding of the religion's rituals and customs. The Rabbi or Reverend was informed that the visitors would observe the proceedings and unobtrusively record notes; clergy were also told not to announce the students' visit to the congregation.

Data were collected at the socializing and refreshment period provided after Sunday morning Episcopal Mass and Friday night Jewish Service. The rooms in which the research was conducted were moderately filled with people; researchers could wander freely through them evaluating dyadic communication.

Circulating through the room where the interactants gathered, four raters in two-person teams converged on the same dyad and recorded the distance and axis at which communicators interacted and the frequency and type of contact the conversants displayed. A fifth individual participated in the research and functioned as the team's leader: she selected appropriate dyads for analysis and insured that both teams recorded axis and distance judgment during the 10th second of dyadic observation. Both teams also observed one member of each dyad, noting the types of gestures used and the frequency of appearance. To record judgments efficiently and unobtrusively, one member on each team observed and evaluated the conversants' nonverbal behavior, and the other team member noted the ratings on an observational guide.

Dyads were observed for three minutes; encounters that terminated before the time period elapsed were not included in the sample. To ensure that both teams rated a dyad simultaneously, each team had a stopwatch which was activated at the direction of the *E*. On completing the research, it was found that the reliability ratings were .87 for gesticulation and exceeded .88 on distance, axis, and tactility.

The raters received intensive training before conducting the research. Initially, each rater was trained to estimate distance and axis and categorize gesture and physical contact. Subsequently, two-person teams were developed, each practiced categorizing and recording the nonverbal behavior of dyads in selected indoor locations. Teams tested strategies for observing a dyad unobtrusively and practiced activating the stopwatches and initiating their judgments at the *E*'s command. Training was conducted until reliability ratings between teams exceeded .85 on each vari-

able. To measure gesticulation, a scale was developed which enabled raters to classify each gesture according to its locus (frontal/peripheral) and distance (close/far) in relation to the gesturer's body, and number of hands used to execute the movement (one hand/two hand). A frontal gesture is a hand and arm movement displayed within the parameters of the gesturer's torso, while a peripheral gesture is a lateral hand and arm movement that extends beyond the torso region. A close gesture is executed no more than six inches from the gesturer's body, and a far gesture exceeds this distance. The scale was necessary to determine whether the gestural repertoire of Jews and Episcopalians differed in terms of distance and locus. No gestural research, including Ekman's (8) work on illustrators, provided a comprehensive method for evaluating these types of gestures.

In scoring gesticulation, fixed gestures—those with a well defined terminus—were rated when they reached full extension before the appendage(s) was returned to the gesturer's body. Gestures that were continuous in nature, flowing from one movement into another, were rated when the initial hand and arm movement was completed, prior to a shift in directionality.

When scoring two-handed gestures, raters recorded the locus and distance of the appendage farthest from the gesturer's body. Since each gesture, whether it was fixed or continuous, was scored only once, the appendage(s) utilized in a movement or series of movements had to be returned to the body before raters scored a succeeding gesture.

Like gesture, tactility was scaled into several behavioral categories (contact/touch/spot touch/hold/spot hold) to assist raters in recording the types of tactile responses displayed and their frequency of appearance. Operationally defined, contact is any type of tactile involvement between interactants. Touch occurs when an interactant brushes an individual's limb or other bodily part; in contrast, a communicator engages in holding when he/she grasps a portion of another person's body. Finally, tactile responses were classified in relation to the length of time the behavior was displayed: spot touch and spot hold last no longer than two seconds, while touch and hold exceed this time period.

The distance at which communicators interact was estimated to the nearest half foot and judged as if the conversants were nose-to-nose and of equal height. For axis judgments, a modified version of Hall's (12) notation system was used. With this scale, the shoulder orientation of two communicators was converted into a numerical score from zero to 12. Positions were scored as though the interactants were hands on a clock, with a

face-to-face encounter, for example, receiving a zero score and a back-to-back orientation rated as 12. In interpreting axis scores, it should be noted that the lower the axis score, the more directly individuals interacted.

C. RESULTS²

A multivariate analysis of variance on distance and axis revealed that the Ss' sex and religion did not interact on either variable. A univariate analysis was subsequently conducted on distance and axis, and the least significant difference (1 *sd*) multiple comparison procedure was used to determine where the differences between individual means were significant. Comparisons were made at the .05 level of significance.

In the analysis, few significant differences were found among Jews and Protestants and males and females. Along with reporting significant differences, nonsignificant trends are also provided, for they identify group differences that might have been significant had a larger sample been utilized. Furthermore, the nonsignificant trends may indicate the types of behavioral differences that once existed between Jews and Protestants, which have eroded because of culture assimilation.

1. *Distance and Axis*

In these areas, no significant differences were found among genders or religions. However, it was found that Jews ($n = 82$) conversed at a more direct axis than did Episcopalians ($n = 80$); however, Episcopalians interacted closer than did Jews. On examining gender, it was discovered that females ($n = 58$) communicated closest, followed by male/female pairs ($n = 52$), and lastly male dyads ($n = 52$). The axis data revealed that male/female dyads communicated the most directly, female pairs followed, and male dyads were the least direct conversants.

2. *Gesture*

Two measures of gesticulation were examined: (a) the frequency of one-handed gestures, two-handed gestures, close gestures, far gestures, frontal gestures, and peripheral gestures, and (b) the proportion of conversants who engaged in each of the preceding gestures.

Episcopalians ($n = 80$) gesticulated more than did Jews ($n = 82$) and used more one-handed, two-handed, peripheral, and far gestures. Con-

² Tables will be sent to the reader on request to the author at the address shown at the end of this article.

versely, Jews engaged in more close and frontal gestures than did Episcopalians.

When comparing mean scores within each religious group, it was found that Episcopalians engaged in significantly ($p < .01$) more one-handed (4.86) and far gestures (4.0) than two-handed (1.22) and close gestures (2.11). Jews also gestured significantly ($p < .01$) more with one hand (4.36) than two hands (1.09); in addition, they displayed significantly ($p < .05$) more frontal (3.72) than peripheral (1.72) gestures. Finally, Jews used more far than close gestures, and Episcopalians displayed more frontal than peripheral gestures.

Analysis of gender scores with the 1 *sd* multiple comparison procedure revealed that males ($n = 78$) displayed more gestures than did females ($n = 84$), particularly peripheral and frontal gestures. Men also utilized significantly ($p < .05$) more one-handed (5.65) and far (4.54) gestures than did women; however, females engaged in more two-handed and close gestures than did males.

An examination of gesticulation within each gender found that males and females used significantly ($p < .01$) more one-handed ($m = 5.65$, $f = 3.61$) than two-handed gestures ($m = 1.08$, $f = 1.29$). Men displayed a significantly ($p < .05$) greater number of far (4.54) than close (2.19) gestures, while females exhibited significantly ($p < .05$) more frontal (3.29) than peripheral (1.64) movements. Although the means were not significantly different, males used more frontal than peripheral gestures, and females displayed more far than close gestures.

3. *Proportional Analysis of Gesticulation*

A contingency table analysis was performed to compare the percentage of interactants who gesticulated. Though no significant differences were found between religious groups, a greater proportion of Episcopalians displayed one-handed, two-handed, far, peripheral, and frontal gestures than did Jews. The same proportion of Jews and Episcopalians used close gestures.

Analysis of gender scores revealed that a significantly ($p < .05$) greater proportion of men (82.86) used far gestures than did women (50.06); in contrast, a higher percentage of females engaged in close gestures than did males. A higher percentage of males engaged in one-handed, two-handed, peripheral, and frontal gestures than did females.

4. *Tactility*

After conducting an analysis of variance on the frequency of contact between interactants, it was found that Jews (.43) touched their partners significantly ($p < .01$) more than did Episcopalians (.06). Jews also engaged in more contact than Episcopalians, while Episcopalians displayed more holding behavior than did Jews.

Although tactility frequencies between sex pairs did not differ significantly, male dyads ($n = 52$) engaged in the most contact, followed by female dyads ($n = 58$), and lastly male-female pairs ($n = 52$). In addition, male dyads were the only paired conversants who displayed holding behavior. Females, however, had a higher mean touching score than did male-female pairs and male dyads, the least touch oriented interactants.

5. *Pair Tactility Proportions*

A contingency table analysis of pair contact proportions revealed that a significantly greater proportion of Jews engaged in contact ($p < .05$: $J = 18.42$, $E = 5.06$) and touch ($p < .01$: $J = 43.75$, $E = 5.06$) than did Episcopalians. The percentage of Episcopalians who engaged in hold was higher than that for Jews.

No significant differences in pair tactility proportions were found between male, male/female, and female dyads; however, the following patterns emerged. The proportion of interactants who engaged in contact was highest among males, followed by male/female pairs, and lastly female dyads. In contrast, a greater proportion of females engaged in touching than did male/female dyads and male pairs, which had the lowest percentage of interactants who touched. Finally, male dyads were the only sex pair in which a percentage of the interactants engaged in holding.

D. DISCUSSION

The distance, axis, and gesture patterns of Protestant-Americans of Anglo-Saxon descent and American Jews appear to be more similar than investigators have reported. For example, Jews and Episcopalians did not converse at significantly different distance and axis. There were also no significant differences between religious groups in the frequency of gestural activity and proportion of interactants who gesticulated. The populations differed gesturally only in terms of the type of hand movements displayed. Episcopalians exhibited significantly more far than close gestures, while Jews used significantly more frontal than peripheral movements.

Interestingly, Efron (6) also found that immigrant Jews from Eastern Europe displayed more frontal than peripheral gestures. The appearance of this trait among second and third generation American Jews suggests that gesture patterns peculiar to cultural and religious groups may be transmitted from one generation to another. To determine the veracity of this observation, cross-generational research on gesticulation and other nonverbal behaviors should be conducted with interactants from selected cultures and religions.

In contrast with the findings on distance, axis, and gesticulation, the tactility results suggested initially that Jews and Episcopalians differed significantly on this variable. It seemed that Jews were more tactile than Episcopalians, since Jewish conversants engaged in significantly more touching and a significantly greater proportion of them displayed contact and touch than did Episcopalians. However, on close examination of tactility scores, it was evident that Jews and Episcopalians engaged in physical contact infrequently, with conversants from both groups, for example, averaging less than one touch during a three minute encounter. Similarly, Jews did not hold their partners in any observed interactions, and only 10 percent of the Episcopalians engaged in this behavior. Although these religious groups have several significantly different tactility scores, the results do not support the prevalent assumption that Jews are substantially more tactile than are Episcopalians.

The tactility findings suggest, along with the results on distance, axis, and gesticulation, that commonly accepted generalizations about Jewish and Protestant nonverbal communication patterns may be partially or wholly inaccurate. Certainly, additional research on the nonverbal behavior of American Jews and Anglo-Saxon Protestants must be conducted in a variety of social settings before it can be determined with any certainty whether these groups have significant communicative differences.

In terms of nonsignificant trends, it is difficult to determine whether these patterns are vestiges of behavioral differences between Jews and Protestants that have eroded because of cultural assimilation. While Boas (5) and Efron (6) have demonstrated that ethnic groups tend to utilize similar communication styles as they assimilate into American culture, there is no substantive data in this study to conclude that (a) Jews and Protestants ever exhibited significantly different nonverbal communication or (b) the nonverbal behaviors of these groups are converging as a result of cultural assimilation. Only cross-generational communication research can determine whether Jews and Protestants have lost certain nonverbal

idiosyncracies and, as a result, have adopted similar communication styles.

While this study did not find significant differences between males and females in distance, axis, and tactility, men and women did display significantly different gesture patterns. In characterizing the gestural styles of men and women, the results indicated that males were more apt to use gestures, particularly one-handed and far movements, than were women. Engaging in significantly more frontal than peripheral gestures, females seemed to utilize fewer expansive hand and arm movements than did males. In interpreting these results, it can be argued that since gestures are expressions that accompany an emotional state, males may rely more heavily on gesticulation to display feelings than do women. However, this observation is speculative and should be tested in future gestural studies.

Unlike the present investigation, future research on gender and gesticulation ought to sample men and women from several diverse populations, thus increasing the generalizability of the results. In addition to examining the types of gestures used by each sex, researchers should explore the function and meaning of gestural behavior for men and women. Through this research, investigators may be able to determine with greater accuracy the gestural repertoire of each gender and the etiology of sex-linked gesture patterns.

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RELATION BETWEEN ALTRUISM AND DISHONEST PROFITEERING FROM ANOTHER'S MISFORTUNE*

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SUMMARY

A field experiment was conducted in which a female student confederate dropped either a 10p or 2p coin while approaching an *S* (total *N* = 80 men and women) who was either another student on the university campus or a member of the public in a central shopping area of a major British city. An observer recorded whether the *S* ignored the coin, or picked it up and either kept it or returned it to its owner. On the campus there was virtually no dishonesty (keeping the coin), but altruism (returning the coin) increased with the value of the coin. In the city, altruism did not vary with the value of the coin, but dishonesty did increase with value of the coin. Dishonesty was much more common in the city than on campus but altruism was equally frequent in both locations. The results imply that dishonesty and altruism are not opposite extremes of the same theoretical variable, but are separate variables influenced independently of each other by other factors.

A. INTRODUCTION

After a disaster, such as an earthquake, it is usual to find volunteers helping the victims, but sometimes looters will also be found. This example powerfully illustrates the fact that in everyday life there are numerous social situations whereby a bystander can act in one of three ways, altruistically to help a victim, dishonestly to profit from a victim, or without commitment by ignoring the victim. This fact immediately raises the important theoretical question of whether altruism and dishonesty are opposite extremes of the same theoretical variable, or whether they should be treated as two separate theoretical variables influenced by different factors.

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This question has not been widely considered. Research on bystander intervention has typically focussed only on altruistic *versus* nonhelping behavior (e.g., 3), whereas research on dishonesty and criminal behavior has considered situations where stealing or cheating rather than honest behavior were the only two options (e.g., 1). Though not addressed to this issue, one exception to this position is the investigation by Penner *et al.* (4) where *Ss* were allowed the three possibilities of returning, stealing, or ignoring a dollar they discovered in a setting in which they were ostensibly carrying out a different experiment. Inspection of their data reveals that in all these situations where altruistic behavior (returning the money) was most common (i.e., laboratory *vs* field settings and identifiable owner *vs* ownerless conditions), dishonest behavior (keeping the money) was least common, suggesting that altruism and dishonesty were acting as opposite extremes of the same theoretical variable. Therefore, to investigate this issue further, a simple, natural social situation was sought in which to determine whether an independent variable which is positively related to dishonesty will be negatively related to altruism—as will occur if altruism and dishonesty are two separate theoretical variables. A situation was selected in which a confederate dropped a coin while approaching an unsuspecting *S*. An observer recorded whether the *S* picked up and returned the coin to its owner, kept it, or having seen the coin drop left it lying in the street.

All confederates were female, university students, but two *S* populations were tested in different locations. The first group of *Ss* were university students tested on campus, the second consisted of adult members of the public tested in the central shopping area of a major British city. The student population was clearly more similar to the confederate in age, occupational affiliation (all were members of the same university community), and dress than were the more heterogeneous *Ss* selected at random in the city center location. Several bystander intervention studies (e.g., 2) have shown that altruistic behavior is often more frequent where the helper and the victim share a common identity. It can thus be expected that different levels of altruistic behavior (returning the coin to the actor) will be found between the two *S* groups and that students should show a greater tendency to help each other than do two anonymous members of the public. Situational differences in the test locations will probably also contribute to differences in levels of altruism and dishonesty (keeping the coin) between *Ss* in the two groups. Indeed, with specific regard to dishonesty, *Ss* may well be less apprehensive about taking a lost coin in the anonymity of a city street than in the central square of the university campus. Various

the effects in the rates of returning, ignoring, or taking the lost coin can be predicted between the two S groups. Confirmation of these predictions would be trivial in themselves, since the nature of the interaction between S groups and the behavioral response is critical for the question under investigation. If altruism and dishonesty are part of the same theoretical variable, then a high level of altruism on the campus compared with the city should be matched by a comparable lower level of dishonesty on campus than in the city. Alternatively, do dishonest and altruistic behavior vary independently?

The value of the dropped coin was also manipulated to provide further, more powerful evidence on the relationship between altruism and dishonesty. Farrington *et al.* (1) tested the hypotheses that the likelihood of dishonestly keeping a lost coin given to an S by an actor increases with the value of the coin. Their hypothesis was not confirmed, but as the present study used lower value coins, it remains possible that in both S groups altruism (returning the coin) and dishonesty (keeping the coin) may both be greater (compared with ignoring the coin) as coin value increases—showing that altruism and dishonesty are independent variables. Alternatively, an increase in dishonesty may be accompanied by a matched decrease in altruism as will happen if altruism and dishonesty are a common theoretical variable.

A subsidiary aim of the experiment was to retest the hypothesis of Farrington *et al.* (1) that financial dishonesty is a rational decision. In their study a confederate approached different members of the public and asked them if they had dropped the coin that was held out to them. Higher value coins were not dishonestly accepted any more frequently than lower value coins; however, as their coins ranged in value from 50p to 10p (at the time of the present investigation in June 1978, a British 10p coin could purchase goods to the equivalent value of about four or five cigarettes); in the present study it was decided to lower the range of coin values and compare reactions to a 10p coin with those to a 2p coin which Ss might well regard as sufficiently valueless to ignore. Thus Farrington's (1) hypothesis would be confirmed if numbers of Ss keeping the coin were greater with the 10p than the 2p coin.

B. METHOD

The experiment was conducted by three pairs of observers and confederates who were all 20-year-old female students.¹ The confederates arranged

¹ The author thanks the following undergraduates who gathered the data reported here as part of a course requirement. Alison Cole, Mungo Duncan, Sally Merian, Helen Smith, Nicola Reid, and Debra Williams.

to walk straight towards the unsuspecting *Ss* and, when each confederate was approximately three yards ahead of an *S*, she surreptitiously let drop either a 10p or a 2p coin before continuing to walk on past the *S*, apparently unaware of her mishap. The observer watched from a distance of about 30 yards whether the *S* ignored the coin, picked it up and retraced his steps to return it to its owner, or kept it himself. A judgment of "ignored the coin" was recorded only when there was clear evidence like a slight hesitation in the *S*'s step accompanied by a definite directed glance at the coin, that the dropped coin had been noticed by the *S*. In practice, it was clear that nearly all *Ss* had seen the coin drop; the reactions of only three *Ss* were equivocal, so that their results were not analyzed and three other *Ss* were tested in their place. Only *Ss* who were alone and at least 20 yards from anybody else and were walking slowly but purposefully towards the confederate with at least one hand free were selected as *Ss*. The dropping coin made quite a noise as it hit the ground and several of the *Ss* who returned the coin expressed surprise that the confederate had not heard it drop. *Ss* who kept the coin typically looked back to check that its owner was not returning to retrieve the coin. No *Ss* responded to the situation in any way that would suggest they regarded the incident as anything other than a natural unstaged occurrence, and there were no differences in the data acquired by the three different actors who all dressed alike in jeans and pullovers. These observations serve to confirm the reliability and validity of the data collected.

Test locations were selected so that each pair of *Es* tested *Ss* both along footpaths in the main square of the university campus and along footpaths in the central shopping area of a major British city. Half the *Ss* tested in each location were male and half female. The order of dropping the 2p or 10p coin was randomized within the constraints of having equal numbers of trials with each coin and with each sex of *S*. In both test locations testing continued until the reactions of the first 40 *Ss* to meet the criteria for selection had been recorded. On campus all *Ss* selected were students of about the same age as the actor, but all were unknown to her personally. In the city center members of the public were selected at random with no attempt to limit the sample to a particular age group or group selected on the basis of dress or apparent social class.

C. RESULTS

No systematic sex differences were found in any comparisons; hence data from male and female *Ss* were combined in all comparisons. If value of

coin is ignored, then on campus 16 Ss returned the coin and only one S kept it and the remaining 23 Ss ignored it, whereas in the city, 18 Ss returned the coin but 11 Ss kept it and 11 ignored it ($\chi^2 = 4.17$, $df = 1$, $p < .05$). Thus altruistic behavior was equally common in the city as on the campus, but dishonesty was much more common in the city than on the campus, suggesting that altruism and dishonesty are two separate theoretical variables. The same conclusion follows from comparisons within conditions. On the campus there was virtually no dishonesty, but altruism increased with the value of the coin. Here 12 Ss returned the 10p coin and eight Ss ignored or kept it, as opposed to only four Ss returning the 2p coin and 16 Ss ignoring or keeping it ($\chi^2 = 5.10$, $df = 1$, $p < .05$). In the city condition, altruism did not vary with the value of the coin, but dishonesty increased with the higher valued coin. In the city, nine Ss returned both 10p and 2p coins, however, among the remaining Ss, eight Ss kept the 10p coin and three Ss ignored it, whereas three Ss kept the 2p coin and eight Ss ignored it (Fisher Exact Probability, $p < .05$).

D. DISCUSSION

The chief conclusion to draw from these results is that altruism and dishonesty are not opposite extremes of the same theoretical variable, but are indeed separate, independent theoretical variables that are not always influenced in a common fashion by other factors, even though this may sometimes occur (4).

The actual differences in the responses between groups are interesting, since they show that the number of people prepared to help a victim or display altruistic behavior was approximately constant on the campus and in the city, even though on the campus help was offered more rationally—that is, when the victim had lost more. On the other hand, in the city, but not on the campus, a significant proportion (28%) of all Ss were prepared to profit personally from another's misfortune by stealing the coin. In the present experiment no deliberate attempt was made to try to discover what factors account for these differences. On the basis of other evidence that the setting influences the likelihood of theft (e.g., 4), it is possible that the setting provided by the anonymity of a city street accounts for the difference between city and campus conditions in levels of keeping the coin. To test this hypothesis students would have to be also tested off the campus and in city conditions or responses in different city locations studied. The striking difference in dishonesty between campus and city conditions highlights the lack of generalizability (or external validity) of results obtained

with students to the general population, at least where dishonesty behavior is concerned. If it is not even possible to generalize from results obtained with students in naturalistic field conditions, where *Ss* are unaware that they are participating in an experiment, how much less is it possible to generalize from informed students tested in the social psychological laboratory?

Support for the hypothesis that financial dishonesty will increase with coin value was found under the city conditions, almost no dishonesty being found on campus. Confirmation of this hypothesis under the conditions of this investigation, but not under the conditions of testing used by Farrington *et al.* (1), probably arose either as a result of using a different range of coin values or of the more limited interpersonal contact in this investigation. In the study by Farrington, *Ss* had actually to claim the lost coin from the confederate, not merely pick it up off the ground. This interpretation is in keeping with the findings of Penner *et al.* (4) who found that the less constrained the social situation, the more frequently will *Ss* commit minor dishonest acts. It is an empirical question whether the factors influencing the occurrence of such dishonest behavior as keeping a lost coin are generalizable to more major criminal acts. *Prima facie* investigations like the present one, or those of Farrington *et al.* (1) and Penner *et al.* (4), seem relevant to understanding the mechanisms by which people commit minor dishonest acts which they themselves perceive as opportunistic and excusable rather than actually dishonest. It is probably a mistake to copy Farrington *et al.* and discuss such findings as if they are relevant to understanding the behavior of those who commit major crimes.

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THE EFFECTS OF MODELS AND CHOICE IN PROMOTING POSITIVE INTERRACIAL BEHAVIORS^{1, 2}

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SUMMARY

Sixty white male undergraduates observed a model behave in a nonaggressive or highly rewarding manner toward a black target. The model was either free to act in this way or was forced to behave positively. An examination of Ss' aggressive and rewarding responses indicated that the models were effective in reducing aggression and increasing reward toward the black target. However, the effect occurred only when the model was seen as acting under his own volition. There was also evidence that the effects of the modeling experience could be generalized to another type of behavior. Results are discussed in terms of the relative effects of models in promoting reductions in aggression and other types of negative behaviors, and the implications of such a strategy for promoting increased racial harmony.

A. INTRODUCTION

While large scale urban riots have become relatively infrequent in the last several years, the occurrence of more localized and direct racial confrontations has steadily increased. This tendency is especially obvious in the public schools and in the military services. Incidents ranging in intensity from minor brawls to full-scale shipboard riots have occurred with such high frequency and have been so disruptive that racial problems have become a major concern of many educational and military professionals. Clearly strategies are needed to control racial confrontations and aggressive interracial interactions.

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² Requests for reprints should be sent to the first author at the address shown at the end of this article.

For the past several years, a program of experimental research bearing on this problem has been conducted by Donnerstein and his colleagues (4, 5, 6, 7, 8, 9, 10, 11, 12). In a series of studies, means have been explored by which interracial negative responses (i.e., minimally rewarding or highly aggressive responses) may be modified. Initial work studied the impact of inhibitory influences, such as threat of retaliation (4, 5, 7, 8, 9), potential social censure (6), and vicarious censure of interracial aggression (12). More recent work has focused primarily on the reduction of aggressive instigations using attitudinal similarity (7) and observation of minimal interracial aggression (10, 11).

The research involving inhibitory influences suggested that direct forms of aggressive behavior could be reduced toward black targets under a number of conditions. Additional data, however, suggest that such opportunities may also increase alternative, less direct negative responses. In the above studies, Ss exhibited a heightened form of indirect aggression against black targets where opportunity for target retaliation or ingroup censure was maximized. If it can be assumed that these manipulations may influence Ss' inhibitions, it would appear, in line with a response substitution formulation, that indirect aggression increases under conditions heightening restraints against more direct negative responses. In general, then, while reducing direct negative responses, processes based on increased white inhibitions are probably limited to the extent that they also give rise to indirect punitive behavior and thus do not operate unambiguously to promote situations beneficial to blacks (8).

Given the foregoing limitations associated with inhibition-based strategies, such as retaliation or censure, it seems reasonable to consider alternative approaches for controlling interracial aggressive behavior which involve modifications of aggressive instigations as opposed to aggressive inhibitions. Several strategies of this type have been widely discussed (13, 14, 16, 17). In the area of aggression, one such strategy has been the observation of nonaggressive models. A number of studies (2, 3, 15, 18, 19, 20) seem to indicate that the observation of such models is an effective means of reducing subsequent aggression, even in conditions where an aggressive response is most likely to occur.

Two additional studies have also indicated that nonaggressive models are an effective means of reducing interracial aggression. While the first clearly indicated that nonaggressive white models reduced aggression without concomitant increases in indirect aggression (8), the second study suggested that the effects were generalized to other types of responses.

From a practical or applied view, however, there are a number of problems which might influence in an interracial context the utilization of a modeling strategy.

One of the more interesting variables relates to the correspondence of observed and actual response choice. Typically in studies dealing with observational experience, an *S* is provided with aggressive response choices identical with those available to the observed individual. Thus, if a model is allowed to deliver any one of eight different intensity shocks, the *S* is subsequently provided with the same eight shocks. However, since such a correspondence between observed and actual response choices is rare in practical experience, it seems important to explore the effect which disparate opinions may have on the observational control of punitive behavior.

Research in the area of attitude change also stresses the importance of choice. Thus, when individuals behaved in a manner which was discrepant with their beliefs, only under a situation in which they were given a choice in their behavior did subsequent attitudinal changes occur (21). It is thus reasonable to assume that the same process would operate when individuals observe peer models. The questions raised are whether or not the behavior will change under a no-choice condition, and second, if such changes do occur whether they are followed by indirect forms of negative behaviors. On a practical level the question to be examined is analogous to asking what effects forced interracial contact has on subsequent changes in generalized behavior. Having individuals observe prosocial or nonaggressive white peer models might be a useless technique for improving interracial harmony if such models have attributed to them no choice in their behavior.

The primary aim of the present study is directed along these lines. It is of particular interest to assess the extent to which correspondence of response choice is an important determinant of behavior in a variety of situations which are differentially similar to those observed. On the basis of a conceptualization of mechanisms underlying observational experience advanced by Bandura (1), and the results of a study by Donnerstein and Donnerstein (11), it is expected that aggression will be modified by the observation of both low aggression and high reward, with the degree of modification greater when aggressive models are observed. Thus, generality in the responses of *Ss* exposed to low aggressive models is expected. With respect to rewarding responses the obverse should hold, with both rewarding and low aggressive models influencing the amount of rewarding behavior. Of more immediate interest in the present study, it is expected that *Ss'* behav-

ior will be modified to a greater extent by observation of a model whose choices are unrestricted than by observation of a model who has a constricted (no-choice) range of options available.

B. METHOD

1. *Subjects*

The *Ss* were 60 white male volunteers from introductory psychology classes. All *Ss* volunteered under the guise of assisting an *E* in administering a learning task and were paid \$2.00 for their participation.

2. *Apparatus*

Aggression and reward were administered via an apparatus consisting of two rows of buttons, with eight buttons in the top row labeled *Points* and eight buttons in the bottom row labeled *Shock*. Two single buttons located to the right of the above rows presumably have the capacity of delivering a fixed-intensity shock and a single point. Video and audio recorders and minitors were employed for making and presenting target and model tapes.

3. *Design*

The basic design reflected a 2×2 factorial with Model (low aggression/high reward) and Choice (free choice/no choice) treated as factors. In addition, two control groups were included to obtain information on the modeling effect. In these groups *Ss* administered shock and reward to a black or white target without observational experience.

4. *Procedure*

To insure some degree of target generality, half of the *Ss* were presented with one black target, while the other half were presented with a different black target. Both targets were presented by means of a videotaped sequence which showed a black student practicing operation of an apparatus designed to be used in a learning task (except for one control group which observed one of two white targets).

Prior to the beginning of each session, the *E* switched on one of the two target tapes. He then met the *S* in the hallway and conducted him to an experimental room containing video monitors and a small computer. The experimental room was arranged so that the monitor showing the target tape was clearly visible. Upon entering the room the *E* paused briefly beside the monitor and indicated that the portrayed events were currently

taking place in another room and were being shown over closed circuit television. He then began an explanation of the S's role in the experiment. After several initial comments, the voice of the target was heard attempting to communicate with the E. The E acknowledged that he could hear the target and then engaged in a short simulated conversation-type dialogue with him. The foregoing sequence was designed primarily to convince the S that another individual was actually present.

Immediately following the simulated conversation the E switched off the monitor and continued explanation of the experiment. He indicated that the experiment was concerned with physiological correlates of learning under various conditions of reinforcement and that the individual seen on the monitor would serve as the learner while the S assisted the E by administering the learning task and delivering appropriate reinforcements. He provided a rationale for students being recruited to aid the E by indicating that a large number of response measures had to be recorded and that the E could not be conducted without assistance. Ss were then given an "informed consent" form to read and sign.

a. *Exposure to Models and Manipulation of Choice.* Each S was placed into one of the two modeling conditions. Under the guise of clarifying the Ss' role in the experiment, a video tape ostensibly depicting an introductory white psychology student was shown administering a learning task to a black target. In the *low aggressive* model condition, the model was shown administering 12 reinforcements, with three shocks and one light (correct response) distributed in three blocks of four trials each. The model administered only shock levels one or two, the lowest levels possible. In the *high reward* condition the model also administered 12 reinforcements, with nine correct responses and three incorrect responses distributed in three blocks. The model was shown delivering reward levels seven or eight, the highest reward possible. In order to manipulate the variable of choice, Ss in the *choice* condition were informed that the model they were viewing had complete control as to what type (level) of reinforcement he wished to administer, which would be the same for the S. In the *no-choice* condition it was explained that when the above tape was recorded there was a mechanical problem with the apparatus, and thus the model could *only* administer the reinforcements which he was delivering. The S was informed, however, that when he administered the task he would be free to choose any level of reinforcement he desired. The two control groups also observed a model, but the video camera was so positioned that the responses made by the model could not be observed. After viewing the tapes the S had any questions answered.

b. Administration of Aggression and Reward After the *S* had viewed one of the modeling tapes, he was given an opportunity to shock and reward the target. It was explained that the target had been studying a list of nonsense syllables while in the other room and would now be tested. The *S* was asked to administer the task while the *E* remained with the target, monitoring both his performance and physiological responses during the task. From a prepared list of nonsense syllables that included an indication of the correct responses for each trial, the *S* was to administer the task to the target. For each trial, the *S* presented, over an intercom, a nonsense syllable to the target. Correct or incorrect responses were indicated to the *S* by either of two lights on the aggression machine. The *S* was informed that if the confederate responded correctly he was to administer points, each point equal to one cent, with the points to be totaled at the end of the task and the appropriate money delegated to the target. If incorrect, he was to deliver electric shock. He was also told that he might administer any number of points or level of shock he felt appropriate for any trial since the particular number or level would have no effect on the target's task performance. The *E* then answered any questions the *S* had, left the room and signaled from the control room for the *S* to begin the task. There was a total of 24 trials with the confederate making errors on 12 trials. Consequently, for 12 trials the *S* administered points for 12 trials he presumably delivered electric shock to the confederate.

After completing the task, the *E* returned to the room and debriefed the *S* as to the true nature of the study.

5. *Dependent Measures*

Three dependent measures were calculated for each *S*. Aggression was in the form of both shock intensity and shock duration. Rewarding behavior was calculated as the total amount of points administered to the target.

C. RESULTS AND DISCUSSION

1. *Aggression Data*

Of initial importance is whether *Ss* were more aggressive toward a black than a white target under the no-model condition. An analysis on the shock intensity scores revealed that *Ss* were more aggressive toward the black ($\bar{X} = 5.48$) than toward the white ($\bar{X} = 2.80$) target, [$F(1, 18) = 7.23, p < .05$]. This result supports those of previous research (5, 6, 7, 8, 9, 10, 11, 12) in which it has been shown that white *Ss* in the United States are more

aggressive towards blacks under conditions of anonymity and nonretaliation, like those in the present study, than under nonanonymous, retaliation conditions.

A 2×2 ANOVA with Models and Choice as factors was next conducted on the shock intensity scores for the groups exposed to the modeling conditions. This analysis yielded significant effects for Choice, [$F(1, 36) = 5.48, p < .05$] and Models, [$F(1, 36) = 4.38, p < .05$]. As expected, Ss exposed to a model who had a choice in responding were less aggressive than the no-choice model ($X's = 3.53$ and 5.32 , respectively). In addition, those Ss who viewed the low aggressive model ($X = 3.63$) were less aggressive than those exposed to the high reward model ($X = 5.23$). Of additional importance is the finding that exposure to the low aggressive model produced a significant reduction ($p < .05$, Dunnett's test) in aggression in comparison to the black target, no-model condition. This result is in agreement with previous interracial research (11, 12) in which it has been shown that exposure to nonaggressive models can reduce interracial aggression.

The prediction that a highly rewarding model would also significantly reduce aggression beyond that of a no-model control was not confirmed. Thus, the observation of a highly rewarding model did not generalize to another type of response (i.e., aggression) as was found in a study by Donnerstein and Donnerstein (11). One possibility for this discrepant finding is the fact that in the present study Ss administered both shock and reward in the same task, while in the Donnerstein and Donnerstein (11) study, they were given two separate opportunities to administer reinforcements. In this latter situation it is possible that shock responses were more salient than in a situation where the S is required to make a decision regarding two types of reinforcements to administer to the black target. This possibility could easily be examined in future research.

The analysis on shock duration did not reveal any significant sources of variation, suggesting that any positive effects of modeling were not offset by concomitant increases in an alternative form of aggression. This, of course, had been the major problem with other variables, such as retaliation or social censure, which reduced aggression primarily through the inhibition of aggressive responses.

2. Reward Data

As with the aggression data, it was found that Ss who did not observe a model were less rewarding toward the black than toward the white target

(\bar{X} 's = 6.28 and 7.98, respectively, $p < .05$). This finding is in agreement with other research in which it has been shown that under conditions of nonanonymity and nonretaliation, American white Ss are less rewarding towards blacks (e.g., 5, 6, 7, 8), than under nonanonymous, retaliation conditions.

A 2×2 ANOVA with Models and Choice as factors was next conducted on the reward scores. The analysis yielded only a main effect for Choice, [$F(1, 36) = 4.68$, $p < .05$], with Ss exposed to a model who freely chose his reinforcements administering higher rewards ($\bar{X} = 8.49$) than those exposed to a model who was forced to behave in a positive manner ($\bar{X} = 7.11$). The mean level of reward under the choice conditions was significantly higher than that administered to the black target under the no-model condition ($p < .05$, Dunnett's test).

In comparison to the aggression data, Ss exposed to either the high reward or low aggressive model under the choice condition were more rewarding to the target. Thus, there is good evidence for response generality in terms of observational experience. While this was not the case for the aggression data, perhaps because of Ss administering both shock and reward in the same task, it seems likely that the observation of at least the low aggressive model was a powerful facilitator for both aggressive and rewarding responses.

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MEMBER LEARNING IN ANALYTIC SELF-STUDY GROUPS*

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SUMMARY

Member learning in an analytically oriented self-study group conference based on the Tavistock model was studied by a six-week follow-up questionnaire. Conference members were 25 graduate students in clinical, counselling, and school psychology, social work, and psychiatry (10 men, 15 women, 22 white, three minority). Factor analysis of the questionnaire showed that members reported learning on three orthogonal factors: 1) general endorsement of the conference, 2) learning about personal relationships and small group behavior, and 3) learning about group dynamics and large group behavior. Content analysis of open-ended statements about member learning revealed approximately equal reports of learning about personal dynamics and group dynamics. Clinical psychologists reported more learning on factor 3 ($p < .02$), more group dynamics learning and less personal learning ($\chi^2 = 9.00$, $p < .01$) than school psychologists. It is concluded that the conference was a useful learning environment, and that members' learning depended in part on their background prior to the conference.

A. INTRODUCTION

The wide array of psychologically oriented groups currently in fashion can be sorted according to the level at which the ongoing events of the group are studied. Three levels of analysis have been identified (17)—the levels of group-as-a-whole, interpersonal, and intrapersonal processes. The Tavistock method of group study (12, 14, 15) has been uniquely designed to focus on the level of group processes. As distinct from (a) a T-group or encounter group (2, 3, 16), in which the task involves learning and change in the area of interpersonal relationships, and (b) a psychotherapy group, in

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which the task often involves insight and change concerning members' individual psychological processes, the Tavistock self-study group has as its task the study of covert processes in the group as a whole, with particular emphasis on the relationships of the group and its members toward authority.

Though the Tavistock method was originally intended for the study of small group processes, the scope of study has been extended in recent years to include the study of the dynamics of large groups [i.e., groups in which ongoing face-to-face contact among all members is not possible (18)] and of relationships among groups (14). In conferences designed to pursue this task, members form groups of the appropriate size and have the services of one or more staff consultants. The behavior of the consultant in the group is rigorously devoted to the requirements of the analytic task. Consultants strictly limit their contact with the group to the appointed time and space boundaries, and they limit their interventions to interpretations of the group process. Group members often find the conferences stressful because of the exclusive task focus and the lack of evident supportiveness on the part of the consultants. Such member reactions are regarded as part of the data for study. The primary task of the conference is the study of group process, not the improvement of interpersonal competence as in a T-group or the relief of intrapsychic conflict as in a therapy group.

The Tavistock method of group study was developed in Great Britain in the 1950's, and the first Tavistock-oriented group relations conference was held in the United States in 1965. With the increasing popularity of this approach to the study of group dynamics, several research studies have investigated the psychological processes involved in such self-study groups (4, 10) and have compared members' experiences in study groups and other kinds of groups, such as T-groups (8, 11). However, little research has been done on the effectiveness of the Tavistock self-study group as a learning environment. Several clinical papers have testified to the importance of learning about dynamic aspects of authority relationships in groups and organizations, especially for mental health workers (1, 6, 13). Joseph, Klein, and Astrachan (9) have attempted to document empirically the effects of a group relations conference in terms of member learning; but the conference they studied had both self-study group and T-group components, so that there was no possibility of ascribing effects specifically to the Tavistock study group experience.

Acknowledging, as do Joseph *et al.* (9), that the evaluation of a group training activity is a highly complex and multifaceted task, the present

paper is an avowedly exploratory study of member learning in an analytically oriented self-study group conference based on the Tavistock model. The study, part of an ongoing series of studies of the processes in Tavistock groups (4, 5, 6, 7, 11), is exploratory in that we rely solely on member self-reports, both on closed-ended and open-ended questions, of their own learning in the conference. Though the Tavistock method emphasizes the study of authority relationships and learning about the dynamics of the group as a whole, our clinical experience as both members and consultants in such groups has been that at least some group members also gain insight into their interpersonal and intrapersonal processes, sometimes in a profound way. The questions in the study were designed to allow for reports of learning in a variety of spheres.

B. METHOD

1. *Subjects*

The group relations conference was open to graduate students in the social sciences and students affiliated with the Division of Mental Health at the University of California, Davis. Complete data were obtained on 22 of the 25 conference members, who represented the following academic disciplines: nine members in clinical psychology; three in counselling psychology; three, psychiatry; nine, school psychology; and one social work. There were 10 male and 15 female conference members of whom 22 were white and three were minority students.

2. *Conference Design*

The group relations conference was held on two consecutive Fridays and used a format similar to other conferences that have been held elsewhere in recent years. The two days of the conference included a brief formal conference opening, six 60-minute small group sessions, three 75-minute large group sessions, and a final 75-minute conference discussion comprising the entire membership and staff. The two small groups were approximately matched for sex, age, race, and professional discipline; and each met with a male consultant and female associate consultant. The large group comprised the entire membership, with the two male staff members as consultants and the two female staff members as silent observers. The explicitly defined primary task of both large and small group events was the study of group processes as they occurred. Aside from the clearly designated task and the restricted, differentiated role behavior of the con-

sultants, the events were unstructured and members were free to proceed in any way they chose. During the final conference discussion, the staff role changed from analytic consultant to discussion facilitator. Other than a reading list sent to members prior to the conference, no specific didactic material was presented.

3. Questionnaire

Six weeks following the conference, members were mailed a questionnaire which included items designed to assess the amount and nature of learning in each of the components of the conference (i.e., small group, large group, and conference discussion). The questionnaire presented 10 statements reflecting assessment of the educational opportunities at the conference, to which members were asked to respond on a seven-point scale ranging from Strongly Disagree to Strongly Agree. The statements are listed in Table 1. In an open-ended manner, members were also asked to "list up to three things" that they learned from the conference. In addition they were asked to identify their conference small group, sex, and professional discipline. Members did not identify themselves by name.

C. RESULTS AND DISCUSSION

Conference members reported slight to moderate agreement with most of the statements about learning in the conference (means ranging from 5.0 to 5.6; see Table 1). Exceptions were the statement about learning in the large group ($M = 4.2$) and particularly the statement about learning in the conference discussion, with which members slightly disagreed ($M = 3.6$). On the basis of the emphasis in Tavistock group work on learning about authority relationships and group dynamics, t tests were performed to see whether members affirmed more learning about these areas (statements 8 and 1) than about peer relationships or one's own behavior (statements 6 and 2). None of these t tests showed significant differences.

A principal components factor analysis with varimax rotation was performed on the 10 statements about conference learning. Table 1 shows the factor names, the percentage of variance accounted for by each factor, and the statements loading on each factor at a level of .40 or above, as well as the mean agreement rating for each statement.

Factor I (labelled Endorsement) appears to reflect overall positive evaluation of the conference experience. Since it was orthogonal to self-reports of learning and also included the item about authority relations, this factor might reflect a member's tendency towards conformity or compliance.

TABLE 1
FACTOR STRUCTURE AND MEAN AGREEMENT RATINGS FOR STATEMENTS
ABOUT LEARNING IN THE CONFERENCE

Statement	Factor loading	Mean agreement
<i>Factor I. Endorsement (51.6%)</i>		
5. If I had the opportunity, I would participate in another Tavistock conference.	.96	5.0
4. I would recommend to others that they participate in a Tavistock conference.	.85	5.1
8. I learned a lot from the conference about relationships with people in positions of authority.	.44	5.4
<i>Factor II. Small group/personal learning (20.2%)</i>		
9. I learned a lot from the small study group session	.89	5.6
2. I learned a lot from the conference about my own behavior and feelings in groups.	.84	5.5
6. I learned a lot from the conference about relationships with peers or colleagues in groups	.53	5.0
<i>Factor III. Large group/group dynamics learning (17.2%)</i>		
3. I learned a lot from the large group sessions	.77	4.2
1. I learned a lot from the conference about group dynamics.	.49	5.0
<i>Factor IV. (Unnamed) (11.1%)</i>		
7. An experience such as the Tavistock conference is an important educational experience for someone in my field.	.83	5.6
10. I learned a lot from the final conference discussion.	.58	3.6

Note: Percentages in parentheses indicate percent of total variance accounted for by the factor.

Factor II (Small group/personal learning) emphasizes self and peers in the relatively intimate small group setting, and seems to reflect learning about personal relationships. Factor III (Large group/group dynamics learning) reflects relatively impersonal learning about group functioning in the large group context. Since Factor IV accounted for approximately the same proportion of variance as any single statement, it was not further analyzed. However, it did serve to emphasize, along with the low mean rating, the unique stimulus value of the conference discussion session in members' reactions to the conference.

There did not seem to be a general factor underlying learning in the conference. Rather, members' self-reported assessments of the effectiveness of the small group (Factor II) and large group (Factor III) settings as environments for learning were uncorrelated. This finding is consistent with prior data showing that personality variables can influence members' reactions to groups of varying size. In particular, in another group relations conference similar to the present one in its aims, structure, and membership composition, Greene (5) found that field dependent group members reacted more adversely than field independent members to a large group

experience. Thus, differences between members on a personality dimension such as psychological differentiation may lead to between-member differences in the effectiveness of large vs. small groups as learning environments.

In response to the open-ended question, the members made 56 statements about their learning in the conference. In a content analysis performed by the first author, each statement was placed into one of four categories that were induced from the content of the statements. To assess reliability, an independent rater achieved 80% agreement on placement of items in categories (89% when categories 2 and 3 were collapsed). To facilitate further analysis, the raters discussed the statements on which they disagreed and reached agreement on a single category for each item.

Category 1, called personal awareness, reflected reports of increased awareness of the member's personality dynamics or characteristic ways of relating to others. A statement in this category often contained a specific self-reference, but the self-reference occasionally had to be inferred from elliptical phrasing. Example: "How dependent I am upon a group leader or authority figure, and how frustrated I become and helpless I feel when these needs are not met." Category 2, called group dynamics—vague, comprised statements about group dynamics or psychological theories that were not elaborated or clarified by specific references to the group. Example: "Groups function with certain predictable evolutionary stages." Category 3, group dynamics—specific, contained references to specific dynamic processes that were seen to occur in the group. The major difference from Category 2 is in degree of elaboration about the dynamic process. Category 3 statements seemed to reflect a more powerful internalization of the learning than Category 2. Example: "Leaders and other group members who do not conform to a 'group norm for behavior' or role are objects of projection of individual feelings. These projections often include both fantasies and expectations." Category 4, simple observations of events, included statements about what happened in the groups, with no vague or elaborated references to cause and effect relationships or group dynamic explanations. Example: "Diversity of group members and cooperation with other group members. Very little cooperation with peers."

The percentage of statements falling into each category was as follows: Category 1 (39%), Category 2 (30%), Category 3 (18%), Category 4 (12%). This pattern did not reflect an equal distribution of items to categories ($\chi^2 = 9.85$, $df = 3$, $p < .02$). With Categories 2 and 3 collapsed, the number of statements about increased personal awareness was approximately equal to

the number of statements about group dynamics learning ($\chi^2 = 52.18$). This finding is consistent with the analysis of responses to the statements reported above and provides further evidence that the Tavistock conference facilitated as much learning about members' personal issues as about group dynamics. Many of the members' reports of personal learning concerned relationships with colleagues or authority figures in work or educational settings. Members reported learning about their possibly unrealistic overreliance on support, guidance, or approval from authority figures in their lives, about their conflicts between maintaining friends vs. pleasing their bosses or teachers, and about similar work-related issues. There was little mention of learning about family relationships, friendships, or intimate relationships. This pattern of learning is consistent with the findings of Joseph *et al.* (9) and with the design of Tavistock conferences, which tend to emphasize work issues.

During the conference discussion, it was argued by some members that the staff's emphasis on the interpretation of unconscious processes and on psychodynamic formulations made the conference a more stressful and less productive learning environment for members with less sophistication in these areas. To test this hypothesis, comparisons were made between two groups of conference members, clinical psychology students [$N = 7$ (three men and four women)], and school psychology students [$N = 8$ (three men and five women)]. It was thought that the clinical psychology students would be more familiar, by professional training and orientation, with psychoanalytic formulations concerning unconscious conflict and defense.

Factor scores were computed for each S for the learning factors described above. Clinical psychologists were found not to differ from school psychologists on Factor I (endorsement) or on Factor II (small group/personal learning), but did report more learning on Factor III (large group/group dynamics learning, $t = 2.72$, $p < .02$). Clinical psychologists were also compared with school psychologists on their open-ended reports of learning. With Category 4 omitted because of low frequency and Categories 2 and 3 combined, school psychologists reported more personal learning (10 statements vs. six) and less group dynamics learning (seven statements vs. nine) than clinical psychologists ($\chi^2 = 9.00$, $df = 1$, $p < .01$).

The data presented here suggest that members did learn from the conference, and that what they learned depended at least in part on their background and experience prior to the conference. This finding is consistent with the philosophy of such conferences (as stated in the description of this conference) that "each member . . . is free to determine both what he

or she learns at what rate." These data are consistent with the hypothesis that there may be a developmental sequence to learning in such conferences. Less experienced or less psychologically sophisticated members may find their attention focussed on their own behavior and feelings and on the stress of the novel situation. Members with more experience, either in previous conference membership or in psychotherapy, may be more capable of tolerating the stress, shifting set, and learning about group dynamic processes.

This group-as-a-whole approach to training in group dynamics seems to have two interrelated goals: first, for the members to develop an increased awareness of group dynamic processes and of their own reactions and contributions to those processes; and second, for the members to use their increased awareness to manage better their own behavior as members and leaders of groups to which they belong. The complete assessment of these goals is probably no less difficult than the assessment of the effectiveness of psychotherapy. The present study has provided empirical documentation about what members say they learn in analytically oriented self-study groups; it represents a step toward the assessment of the first goal.

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CONTENT AND GENERALITY OF YOUNG WHITE CHILDREN'S ETHNIC ATTITUDES¹

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SUMMARY

This study was designed to investigate the content and both intra- and interethnic generality of young white children's racial attitudes. One hundred and nineteen Caucasian boys and girls between the ages of five and nine were tested with use of a 12-item picture-story technique. Results clearly indicate differences in the Ss' overall attitudes toward blacks, Mexican-Americans, and Orientals ($p < .001$), as well as in their perceptions of certain attributes of these minority group members ($p < .001$). They perceived Orientals most favorably and Mexican-Americans least favorably. They also rated nonwhites highest on ambition, followed by responsibility and desirability. The personal attribute receiving the lowest rating was attractiveness. The data did not support the existence of either intra- or interethnic generality.

A. INTRODUCTION

During the last 50 years hundreds of studies in the United States have been conducted in the area of racial prejudice. The research has tested black and white children's and adults' preference for white *versus* black people, as well as figures, drawings, dolls, and various other inanimate objects (4, 5, 6, 36, 38). Investigators have asked Ss to rank order various ethnic and national groups in terms of their own degree of liking for these groups (14, 24, 32, 39) and to identify adjectives which describe members of these groups (7, 10, 14).

The findings of the vast majority of this research have clearly documented the existence of negative attitudes toward and perceptions of

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blacks with only a few exceptions (e.g., 12, 17). The data indicate that both black and white children as young as age five perceive skin color as possessing both social and racial significance and ascribe positive values to white complexions and negative values to black complexions (1, 11, 16, 21, 23, 26, 27, 28, 37). Research has shown that Caucasians in almost all situations are perceived to be the most likable ethnic group, and are generally described as being industrious, intelligent, and ambitious, whereas blacks are liked least and are viewed as being dirty, lazy, dishonest, and stupid (9, 13, 33, 34, 39, 40).

A review of studies in the area of racial prejudice reveals that the majority of research has been concerned solely with attitudes toward blacks. Only scant attention has been paid to Orientals and Mexican-Americans (e.g., 8, 25, 30, 35) either by analyzing attitudes held by others toward these ethnic groups, by including them in the samples, or by analyzing their own ethnic identification and preference in comparison with blacks and whites. Even with the research which has identified respondents' amount of liking for various ethnic groups, little if any effort has been exerted to compare attitudes toward members of one ethnic group with attitudes toward another (e.g., attitudes toward blacks *versus* attitudes toward Mexican-Americans, etc.). Furthermore, research efforts have not been directed toward investigating the consistency across traits in racial perception. This leaves two extremely important questions unanswered: First, do whites perceive nonwhites differentially on varied trait dimensions, or do they merely perceive them as uniformly negative on most trait dimensions? Second, does the favorability or unfavorability of whites' racial attitudes vary from one racial group to another, or do they not differentiate between the various groups?

The present research is designed to investigate these two neglected areas of ethnic attitudinal research by examining young children's ethnic attitudes and stereotypes in terms of both content and intra- and interethnic generality (3). Intra-ethnic generality is defined as a homogeneity of opinions and preferences dealing with a specific ethnic group, whereas interethnic generality is a homogeneity of racial attitudes from one ethnic group to another. Therefore, this research is specifically designed to (a) determine whether young white children differentially perceive nonwhites in terms of their degree of ambition, aggressiveness, desirability, and responsibility (i.e., intraethnic attitudes) and (b) compare and contrast ethnic attitudes held by young white children toward blacks, Mexican-Americans and Orientals (i.e., interethnic attitudes).

B. METHOD

1. Sample

One hundred and nineteen Caucasian children between the ages of five and nine served as Ss. Their mean age was 7.4, and the sample included 62 boys and 57 girls. All were students at a public elementary school located in a residential area of Los Angeles. The school was racially mixed with a 50.4 percent nonwhite population: 14.4 percent black, 10.2 percent Mexican-American, and 5.8 percent Oriental. However, for purposes of this study only Caucasian children were included in the sample.

2. Instruments

Ethnic attitudes were measured through the use of a 12-item scale similar to the picture-story technique used by Renninger and Williams (29) and Williams and Roberson (38). For each item the Ss were shown two full-length crayon drawings on an 8-1/2 × 11 inch piece of paper, of children identical except for skin and hair color. One drawing was of a Caucasian child and the other was of either a black, Mexican-American, or Oriental child. The black figure was colored with medium-brown skin and black hair, the Mexican-American figure with light-brown skin and black hair, the Oriental figure with yellowish-tan skin and black hair, and the Caucasian figure with pinkish-tan skin and either blond or brown hair. All figures were drawn with a minimum of facial characteristics and were posed either sitting, standing, or walking. The use of identical drawings except for skin and hair color controls for factors such as liking or disliking one of the figures because of clothing, facial characteristics, and overall appearance.

There were six sets of pictures, two sets for each ethnic minority being studied, which were administered twice during the testing of each S. The pictures were shown in the same order in the first six questions as in the second six, and it was randomly determined which question would be paired with which pair of drawings.

The Ss were introduced to the crayon drawings by being told that the Caucasian figure was an American and the other was either an Afro-American, Mexican-American, or Oriental-American. The drawings were introduced in this manner for two reasons: first, to make apparent the ethnic differences between the figures while also noting the national similarities, since all were referred to as "Americans"; and second to avoid referring to the crayon drawing by color (i.e., "Here is a Yellow child or Brown American").

Each presentation of a pair of drawings was accompanied by a story read to the *Ss* which was designed to assess the *Ss* attitudes toward the minority figure (i.e., "Here are two boys, one is Mexican-American and the other is American. Their teacher says one of these little boys tries very hard at everything he does. Who is it?") A total of 12 different two- to three-line stories composed the ethnic attitude scale employed in the study. The scale was made up of three distinct sets of four items which were designed to assess ethnic attitudes toward blacks, Mexican-Americans, and Oriental- respectively. The stories dealt with attitudes regarding certain personal traits believed to be representative of common stereotypic conceptions of minority group members (e.g., ambition, attractiveness, responsibility, and desirability). One story was designed for each of the ethnic groups to test attitudes regarding these four respective traits. The stories were worded so that half were positively and the other half were negatively stated [e.g., . . . which one is the hardest worker (Ambition); which one is ugly and dirty (Attractiveness); which one is fair and honest (Responsibility); which one would you like to play with (Desirability)].

After hearing each story and viewing the drawing, the *Ss* were requested to choose which of the two figures the story was describing. The order in which the drawings were presented was randomized, with the minority figure being presented first in half of the stories and the Anglo figure first in the remaining stories, thereby reducing the problem of the *S* responding on the basis of the picture-order rather than the ethnicity of the individual in the picture and the story.

To provide an index of the scale's stability a test-retest reliability coefficient was calculated. Ten percent of the sample was retested approximately four weeks after the initial testing period and the reliability for the instrument was found to be .78.

3. Procedures

Es were four upper-division and graduate students who were randomly assigned to the *Ss*. All were females, three Caucasians and one black. Each *E* was introduced to the *Ss* by their regular classroom teacher as being a college student who was going to do some testing to determine how people make friends. Each *S* was individually removed from the classroom and taken to the school auditorium where all testing was conducted.

Each *E* followed a carefully prepared script which began by her asking the *S* his full name and age and chatting with the child for a few moments about his daily school activities, thereby allowing the child to become

accustomed to the situation. The *E* was seated next to the child and turned to face him when collecting data. The *E* held the drawings in a vertical position midway between herself and the child. The mimeographed form on which the *Ss'* responses were recorded was kept behind the drawings in such a manner that the child could not observe the *E's* actions.

The responses made by the *Ss* were rated by the *Es* on a five-point scale. A "1" was assigned when the child showed no obvious signs of frustration, confusion, or hesitation in choosing the Caucasian figure for a positively worded item or the minority figure for a negatively worded item. A "2" was assigned when the child showed obvious signs of frustration or hesitation in making the same response as that given a score of "1." A score of "3" was given when the *S* was unable to choose between the two pictures or when he/she changed response. A "4" was assigned when the child hesitated, showed frustration or confusion before choosing the minority figure for a positively worded item or the Caucasian for a negatively worded item. A score of "5" was given when the *S* showed no signs of frustration, confusion, or hesitation in making the same response as that assigned a score of "4."

The *Es* were trained and spot-checked by the research investigator to ensure that the scoring among them was consistent. They were informed they were only to rate a response as a 2, 3, or 4 when the child's difficulty was conspicuous. A reliability check of the *E's* coding was made with two coders randomly assigned to 10 percent of the total sample. All assessments were done independently by the coders, and the intercoder reliability was found to be 92 percent.

C. RESULTS

To determine whether the *Ss'* overall preference toward and perception of the various ethnic groups differed, a two-way analysis of variance was calculated. The results indicate that the children clearly differentiated between blacks, Mexican-Americans, and Orientals ($F = 6.41$, $df = 2, 236$, $p < .01$) and perceived Orientals most favorably and Mexican-Americans least favorably (see Table 1). Next a series of pairwise comparisons for correlated measures was performed with the ethnic group summary scores listed in Table 1 to determine whether the *Ss* perceived a difference between each of the ethnic groups being studied. The results indicate that the children's attitudes were far more favorable toward Orientals than they were toward either blacks or Mexican-Americans ($p < .05$). However, their attitudes toward blacks were not significantly different from their attitudes toward Mexican-Americans.

TABLE 1
MEAN SUMMARY SCORE BY ETHNIC GROUP AND ATTRIBUTE

Attribute	Oriental	Mexican-American	Black	Attribute summary score ($\Sigma \bar{X}$)
Ambition	2.92	2.38	2.44	7.74
Attractiveness	2.26	1.80	2.25	6.31
Desirability	2.68	1.88	1.87	6.43
Responsibility	2.17	2.53	2.70	7.40
Ethnic group summary score ($\Sigma \bar{X}$)	10.04	8.59	9.24	

When the data were analyzed regarding the Ss' perceptions of nonwhites in terms of the four personal attributes included in the study, it also became apparent that they saw obvious and distinct differences ($F = 7.29$, $df = 3, 354$, $p < .001$). The children rated nonwhites most favorably on ambition, followed by responsibility and desirability. The personal attribute for which the minority group individuals received the lowest ratings was attractiveness (see Table 1). Tests of differences between correlated means revealed that the children significantly discriminated ($p < .05$) in their perceptions of minority group individuals on four of the six possible pairwise trait combinations; only attractiveness *versus* desirability and ambition *versus* responsibility did not yield significant differences. The data further indicate that a significant interaction exists between ethnic group and the personal attribute factor ($F = 5.83$, $df = 6, 708$, $p < .001$). The interaction is a result of the respondents' relatively unfavorable perception of Orientals' degree of responsibility when compared with blacks and Mexican-Americans. However, for the remaining three factors Orientals were rated the most favorably.

As a result of prior research findings which indicate differences in racial attitudes as a function of examiner's race (2, 15, 17, 18, 19, 31), respondent's age and/or grade level (8, 19, 20, 22), and sex (19), additional analyses were computed. The results indicate that neither the examiner's race nor the respondent's age or grade level affected the pattern of results obtained in this study. There was a slight tendency for the females ($\bar{X} = 29.4$) to respond in a less prejudiced fashion than the male Ss ($\bar{X} = 26.2$); however, the differences were only significant at the .07 level ($t = 3.44$, $df = 1, 117$).

D. DISCUSSION

The racial attitudes of young white children were observed to be extremely complex, inasmuch as the Ss clearly discriminated in their attitudes toward the three major nonwhite ethnic groups and differentially attributed certain stereotypic characteristics to nonwhite individuals. The young white children did not perceive all minority groups to be the same, inasmuch as they held significantly more favorable attitudes toward Orientals than they did toward either blacks or Mexican-Americans and their attitudes were least favorable toward Mexican-Americans. Also, their perceptions of certain traits of ethnic group members varied significantly; they perceived nonwhites most favorably on ambition, less favorably on responsibility and desirability, and least favorably on attractiveness. The data, thus, do not support the existence of either intra- or interethnic generality. However, even though the Ss' perceptions of minority members varied from one ethnic group to another and from one trait to another, the same pattern of personal attribute ratings typically emerged except for the rating of Orientals' level of responsibility.

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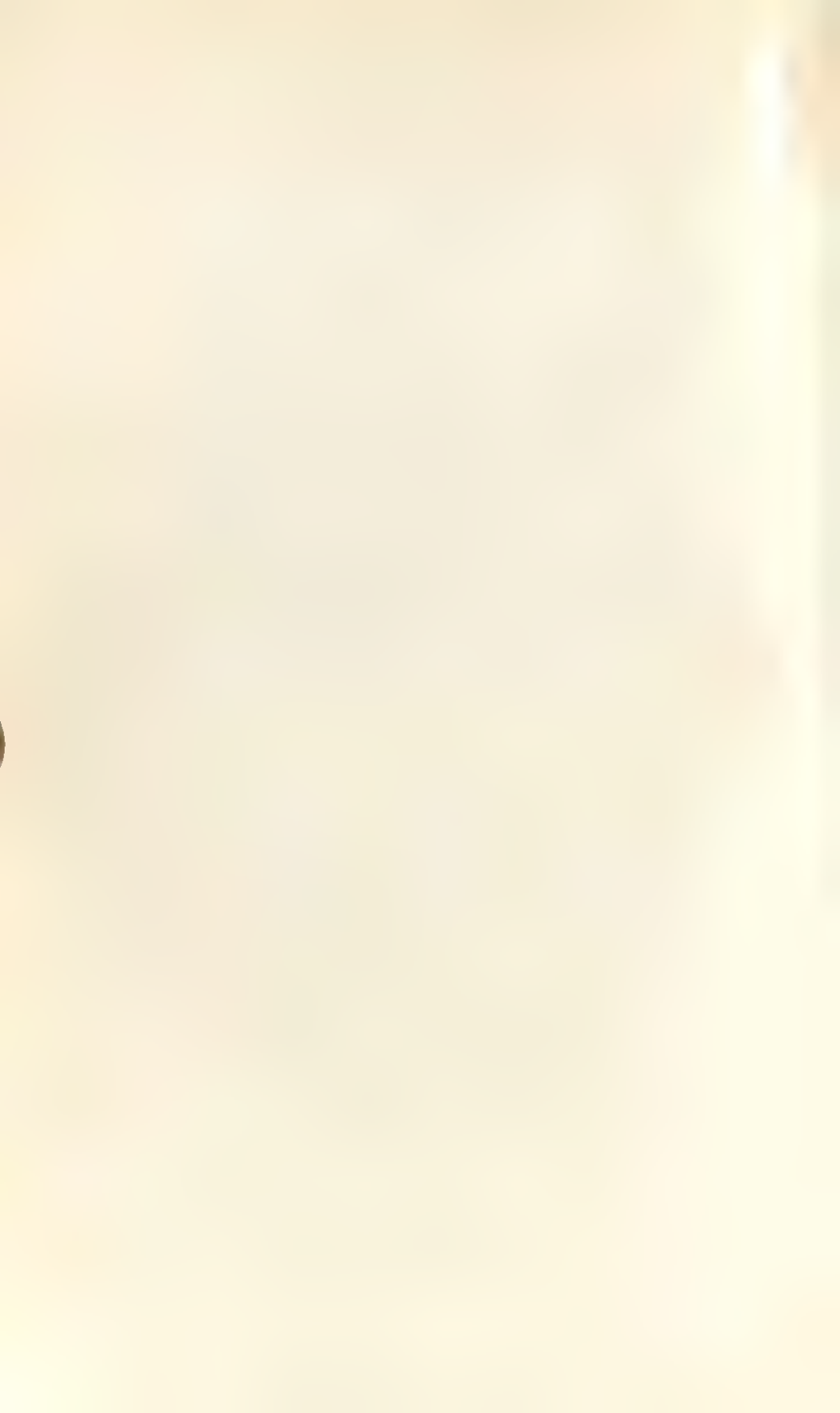
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PSYCHOLOGICAL DIFFERENTIATION AND SOCIAL STRUCTURE¹

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SUMMARY

From a sociopsychological theoretical perspective, the present study was designed to explore the interactive effects of personal and social boundaries on emotional reactions. Members of a group dynamics training conference ($N = 41$ men and women students) were assessed for level of psychological differentiation and then completed self-report questionnaires following participation in small and large self-study groups. Findings showed that the field dependent (i.e., relatively undifferentiated) members, compared to the field independent participants, reacted more adversely in the large and less structured group context and more positively in the small group setting.

A. INTRODUCTION

The structural concept of boundaries has been gaining heuristic value in the understanding of the confluence of personality and social system dynamics upon interpersonal behavior. As applied to the personality system, boundaries refer to those discontinuities that demarcate the subjective sense of self from external reality and from unconscious mental content. From a diversity of theoretical frameworks, the capacity to experience and represent boundaries, particularly the differentiation of self from nonself, is considered a fundamental skill to be acquired during the first year of life. Deficiencies in this skill, ranging from total inability to differentiate independent objects as found in schizophrenia to exaggerated efforts to separate objects as seen in paranoia, can have pervasive and profound effects on intrapsychic and interpersonal processes (2, 10).

At the level of social system, boundaries denote those discontinuities of

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time, space, and task definition which separate a collectivity from its environment and those internal divisions of labor and authority which allow work to be meaningfully parceled into specific roles. Just as the regulation of self-boundaries is considered a *sine qua non* of adaptive individual functioning, control of social system boundaries is necessary for successful task accomplishment. Recent formulations have discussed how social processes—the achievement of task-oriented work, as well as the emergence of disruptive affect and socially shared defenses—are the direct resultants of system boundary management (12).

Other recent theoretical efforts have begun to examine the individual in the group from the dual perspectives of personal and social boundary characteristics (4, 7). These views emphasize the individual's dilemma around preserving self-boundaries in all groups. Social involvement is said to necessitate temporary and partial dissolution of self-boundaries for the sake of group cohesiveness and unity. The degree to which personal identity is submerged is a conflicted, and threatening dilemma. Total fusion with the social context can evoke primitive anxieties over annihilation of the sense of self. Rigid preservation of self-boundaries can also raise survival issues related to psychological isolation and abandonment.

The degree to which this deindividuation dynamic is salient theoretically depends upon structural aspects of the social system and personality. As Gibbard (4) has articulated, social structures serve partially as a defense against regressive forces of dedifferentiation. Social structures, roles in particular, delineate guidelines for being a differentiated group member; they allow the individual to feel both a part of and apart from the collectivity. As a social context becomes more ambiguous and undifferentiated, an individual's personal boundaries should become more important for maintaining an appropriate and sufficient degree of separation from others to permit orderly transactions. Without firm personal boundaries an individual in a relatively unstructured setting may have difficulty discriminating his own values, needs, and wishes from those of the group as a whole and, consequently, be threatened with a loss of a sense of personal identity.

Fisher and Cleveland (3), in their work on body-image boundaries, have hypothesized that the less articulated one's personal boundaries, the greater the preference for and comfort with highly structured social contexts. They postulate that this type of setting serves to protect the boundary-indefinite individual from unexpected events by "maintaining a rigid constancy within its borders . . ." and by seeking "to limit as far as possible the intrusion of outside influences" (3, p. 365).

Some empirical support for this hypothesized relationship has obtained in studies using Witkin's measures of psychological differentiation (5). These studies, primarily limited to social isolation contexts and dyadic interactions, indicate that field dependent individuals are more sensitive to and adversely affected by situational ambiguity than relatively differentiated individuals. These boundary-indefinite individuals are found to become more anxious and socially dependent in amorphous, vaguely defined social settings.

The present study, part of an ongoing project on the reciprocal effects of personal and social boundaries, examines affective reactions of relatively undifferentiated (i.e., field dependent) and relatively differentiated individuals following their participation in two social situations designed to differ primarily in terms of group size. As discussed by Ziller (17), if the size of a collectivity increases without a corresponding increase in the internal structure—i.e., number of differentiated work roles—the experienced ambiguity of the situation should increase. Turquet (14), Main (11), and Ziller (17) have articulated the threats to maintaining a personal identity in a large group context. Large groups, especially those that are relatively free, are perceived by the individual as boundless, amorphous, and unencompassable. Difficulties in establishing discrete roles, in preserving a comfortable interactive distance between self and others, in simply being heard and responded to are extreme and can lead to complete withdrawal or fusion. In comparison, small groups, even those with minimal, explicit social structure, are considered much less threatening for the individual partly because they are said to afford greater opportunities for creating powerful, covert structures (1, 14). Given these developing sociopsychological formulations and the empirical evidence gathered to date, it was expected that field dependent individuals would be more adversely affected by a large group context than their field independent counterparts. In contrast, small groups, with their postulated capacity to generate implicit social structures, may provide the external supports favored by the boundary-indefinite individuals.

B. METHOD

1. *Group Relations Conference*

The context in which the present study was implemented was a group relations conference designed to provide opportunities for experientially based learning about group dynamics. This conference was one of a series of similar group training events which have been sponsored, conducted,

and analyzed by the Departments of Psychology and Psychiatry of Yale University during the past decade (6, 8, 9). Structured along the principles developed by the Tavistock Institute of Human Relations (13), the study had as its focus the more primitive, covert, and collusive processes which are considered to pervade all collectivities and especially those implicit dynamics involving authority and leadership.

Most distinctive of the Tavistock training model is the role behavior of the group leader who is designated as consultant. Characteristically, the consultant refrains from addressing or responding to individuals; comments, impersonally directed to the entire group, are limited primarily to interpretations of group-as-a-whole phenomena. Guidance, support, and direction, normally expected from leaders, are intentionally withheld. The stripping away of the supportive leadership functions generates the data—the feelings, fantasies, and behaviors—which are the focus of study.

The present conference was a three-day, nonresidential educational event, organized into a series of alternating and interrelated activities. The conference design included the formation of five small groups, each composed of eight or nine conference members and one staff consultant; each group met for six 75-minute sessions. Composition of these small groups was matched approximately for age, sex, and race. The conference design also included three large group sessions involving the entire 41 members and three staff consultants. The explicitly stated primary task in both of these activities was identical: namely, the study of the "here and now" processes in the group.

2. *Subjects*

The 24 male and 17 female conference members were students in three undergraduate and graduate courses on group dynamics taught in the Departments of Psychology and Psychiatry at Yale University. In voluntarily registering for the conference, all students were explicitly informed of the planned research component.

3. *Assessment Measures*

During the introductory session of the conference, members were asked to complete a battery of personality measures which included the Group Embedded Figures Test (16). Scoring of this perceptual-cognitive task is based on the total number of simple figures accurately detected from their embedding contexts. Scores ranged from 5 to 18 with a mean of 13.3. In the statistical treatment of the data, the upper and lower 30% of this

distribution were used to identify the field independent and field dependent Ss.

At the end of each small and large group session, a 15-item questionnaire was distributed to the group participants. Items were designed to tap affective reactions about one's participation, and feelings directed toward the other group members and consultants. Two mean ratings for each item, averaged over the small group sessions attended and over the large group sessions attended, were calculated for each participant.

C. RESULTS AND DISCUSSION

1. *Factor Analysis of the Self-Report Questionnaire*

To reduce the dimensionality of the 15-item questionnaire, a principal components factor analysis was performed followed by Varimax rotation. A four-factor solution appeared most psychologically compelling, corresponding approximately to the four basic emotional climates (i.e., pairing, fight, flight, and dependency) articulated by Bion (1). The first factor, labeled Attraction, seems to reflect interpersonal attraction and involvement, as shown by the following items and factor loadings: close to others, .76; friendly, .73; respected, .73; sensitive to others, .71; active, .42; anger at members, -.54. The five items which load highly on the second dimension, labeled Fight, primarily involve anger toward other group members and toward the consultants (frustrated, .76; nervous, .70; unsafe, .65; anger at consultants, .55; anger at members, .45). In contrast, the third factor, Flight, taps member passivity and withdrawal (competent, -.83; hopeful, -.75; interested, -.63; active, -.58). The last dimension, labeled Counterdependency, consists of denial of dependency wishes directed toward the group consultants (want more help from the consultants, -.79; indifferent toward the consultants, .61).

2. *Psychological Differentiation and Social Structure*

For each of the affective dimensions, a factor scale was constructed consisting of items shown above. Cell means for these factor scales are presented in Table 1. To examine the effects of psychological differentiation and social structure on these emotions, a series of 2×2 repeated measures analyses of variance were performed.

Empirical support for the predicted interaction was obtained on the Attraction dimension. The data reveal that the small group contexts evoked stronger positive feelings than the large group situation [$F(1, 22) =$

TABLE 1
CELL MEANS FOR THE FOUR AFFECTIVE DIMENSIONS

Factor scale	Group			
	Field independent		Field dependent	
	Small	Large	Small	Large
Attraction	5.1	4.3	5.5	3.7
Fight	4.6	4.6	3.7	3.7
Flight	4.1	5.4	4.3	6.4
Counterdependency	5.6	5.8	5.3	5.2

33.14, $p < .001$). This differential reaction to the social situation was more pronounced for the field dependent members. Compared to the more psychologically differentiated members, field dependent participants were more interpersonally responsive in the small groups and less involved in the large groups [$F(1, 22) = 4.79$, $p < .05$].

Additional supportive evidence obtained from the third affective dimension, Flight. As expected, significantly more passivity and withdrawal reactions were acknowledged in the large group context [$F(1, 22) = 51.82$, $p < .001$]. Field dependent members also tended to express more flight than their field independent counterparts [$F(1, 22) = 3.01$, $p < .10$]. While the hypothesized interaction failed to reach statistical significance, analyses of simple effects revealed that field dependent and field independent members responded differently only in the less structured, large group. In this context, the field dependent members were significantly more withdrawn than the field independent participants [$F(1, 22) = 5.31$, $p < .05$].

A main effect on the Fight factor indicated that field independent individuals readily acknowledged more anger toward others, a finding corroborating earlier reports (15).

No significant findings obtained on the Counterdependency dimension, although the direction of the cell means indicated greater denial of dependency by the field independent members, consistent with expectation (5).

These results further support the differences in social orientation associated with level of psychological differentiation. The accumulated data depict the field dependent person as more anxious in ambiguous settings and more attracted to structured contexts. From a sociopsychological perspective, it is tempting to postulate, very tentatively, an organizing principle for the data in terms of the notion of protecting the sense of self from deindividuation forces considered to pervade all groups. The field dependent person may cope by joining highly structured social situations. Such a context could bolster and supplement inarticulate personal bound-

ties by providing regulated, orderly, and predictable transactions which help to confirm the sense of self. This same setting might be aversive to those with more definite self-boundaries because of the demand to submerge personal idiosyncrasies. The field independent may reinforce self-boundaries by joining relatively unstructured settings in which individual goals are valued over group goals.

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A COGNITIVE APPROACH TO SOCIAL AND INDIVIDUAL STIGMA¹

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SUMMARY

Although Goffman's influential treatment of stigma has prompted researchers to generalize from studies of reactions to certain negatively evaluated characteristics (e.g., physical handicap) to others (e.g., sex), it is argued that such generalizations ignore an important dimension of difference. Social stigma involves membership in a devalued group and may correspond to what is generally understood as "minority status" in our society; individual stigma refers to possession of a single discrediting attribute. Both social and individual stigmata manipulations were introduced into complex and realistic personal descriptions of applicants for jobs involving authority and/or personal contact. Ss were 40 students at an Ivy League university, 16 of whom were female. The hypothesis that social stigma would be a bar to positions of status and authority while individual stigma would restrict access to positions involving interpersonal contact was only partially supported, but the cognitive processes explored appear to be both subtle and realistic.

A. INTRODUCTION

Goffman's influential treatment of stigma (12) has highlighted certain problems of impression management which anyone who possesses a discrediting attribute faces, despite the apparent differences between them. But his presentation of the significant commonalities has also tended to obscure the differences between types of stigmata and the problems they pose for the individual. As Millman (21, p. 271) notes, "there is a real difference between being bald and being paraplegic." Besides differences in

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degree, there may be important differences in kind. In particular, there may be varieties of discrimination distinctly associated with the economic and political exploitation of certain groups which are quite different in nature and consequences from discrimination on the basis of individual "discrediting attributes."

This dimension of difference is that between social and individual stigma. The distinction is that between membership in a self-conscious group (such as a race or sex) which is defined as inferior for particular roles in some society, and the possession of some discrediting attribute which is personal rather than group related (e.g., deafness, mental illness). Berger and Luckmann (3) make this distinction and suggest that only the social provides the basis for an institutionalized counteridentity. Thus, it is suggested, there are not only quantitative differences between stigmata, such as the amount of suffering caused, but also qualitative distinctions, such as self-conscious group identity, making the socially stigmatized, as here defined, accord more with what has been meant by "minority group" (e.g., 13). There are at least two further ways in which a social rather than an individual stigma may have qualitatively different consequences for the person being judged wanting by society. In the first place, a social stigma may be more likely to be a "master status" (14) which overwhelms other attributes. Second, social and individual stigmata may be perceived as disqualifiers in very different situations.

Most studies have not dealt with the problems of assessing the relative centrality of a stigma to a person's status. Many studies of stereotyping have followed the Katz and Braly (17) paradigm and used informationally thin, often single word, stimuli, such as "a Negro" (20), "a Turk" (16), or "a housewife" (9). The introduction of even one additional item of information may make a great deal of difference. When Bayton, McAlister, and Hamer (2) differentiated their stimuli by social class, as well as race, they found the resulting characterizations varied more as a function of class than of race. And Epstein, Krupat, and Obudho (11) found cleanliness a more potent determinant of children's preferences than the race of the stimulus person. But a design in which just one or two factors are varied (race, social class) cannot produce stimuli with the range of characteristics real people have. Moreover, these one or two characteristics are automatically in the foreground of the Ss' attention (6, 23). How salient they would be in a "noisier," more realistic situation is indeterminable. Even if the manipulated characteristics are increased to a formidable number, their presentation in a list-like fashion may incline Ss to give each more equal weight than would occur in a more natural setting.

Similarly, there has been little investigation of the situations in which the stigmatized are disqualified. Crippled or otherwise individually stigmatized people may create discomfort for those in their immediate presence (18, 22) but be acceptable even in a position of great authority. However, Triandis and Triandis (24) suggest that authority situations are those from which women are most likely to be excluded. While authority may often be denied to blacks as well, some authors suggest that there may be two distinct forms of racism and that for many whites, physical contact with blacks may be more disturbing than social equality (15, 19). Certainly marriage implies at least as much physical as social proximity (4) and there is some evidence that those who are most disturbed by such personal interracial contact are not necessarily those most unwilling to see blacks in positions of authority (5).

The present study applies multidimensional scaling methods to investigate Ss' judgments concerning realistically described people with different kinds of stigmata in different situations. The stimulus persons were presented to the Ss as applicants for a job, and the characteristics of the job were varied between Ss. It was predicted that social stigma would tend to be a central organizing dimension of the Ss' perceptions of all the applicants, but that such stigma would be used primarily to disqualify applicants for positions as high or higher in status than the Ss themselves. Individual stigma was predicted to be less central in the overall perceptions of the stimulus persons, and to be used primarily to disqualify applicants for jobs requiring close personal contact with others.

B. METHOD

1. *Subjects and Procedures*

Ss were 40 students at an Ivy League university, who were paid for their participation in our study of "impression formation." They were presented with a set of 13 cards, each containing a short first-person account of the "personal background and interests" of a fictitious job applicant. The Ss were instructed to consider that personnel directors often had to choose among equally well qualified applicants and to base their judgments upon a general impression of how well suited the applicant was to the particular job in question. The instructions stressed the equality of formal qualifications. The Ss were asked to respond on the basis of their overall impressions of the stimulus persons, rather than making point-by-point comparisons.

Several of the paragraphs contained manipulations. Three identified the

applicant as female and four as black, including one black woman. These were considered the social stigmata. Four additional statements indicated some form of individual stigma: one was hard of hearing, one walked with crutches, one had been arrested for shoplifting, and one "nearly had a nervous breakdown and went through a lot of psychiatric counseling." A representative example of the informationally rich descriptions follows:

I'm chiefly interested in math and logic, even though most women aren't. I enjoy solving mathematical problems and puzzles of all sorts. I've played chess with a passion for some years now and am good enough to beat most of the people I know. I am also the manager of a small local food co-op. I get along with most everyone fairly well, but my only real friendships have been with people who share my interests.

In order to compare the socially and the individually stigmatized in a small number of stimuli, all of the individually stigmatized were presented as white males; regrettably, this ruled out also assessing the relative impact of an individual and a social stigma on the same individual.

The *Ss* compared all the stimuli, pairwise, in two ways. They rated each pair on a seven-point scale for its similarities or dissimilarity in global terms. They also picked one of each pair as preferred for the job in a forced choice item. The similarity data were used by the multidimensional scaling program to determine the cognitive maps used by the *Ss* and thus the relative importance of the stigmata to a global impression of the stimulus persons. The preference judgments were summed into one overall preference score representing the number of times each stimulus was preferred in pairwise comparisons with all others. Thus the range of the score was from 0, indicating never preferred, to 12 (preferred over all others). All 91 possible pairs of the 13 stimuli were presented to each *S*, in a random order, on a computer generated questionnaire form. A different random order was used for each *S* to control for order effects.

The job for which each *S* was to consider the applicants was included in a set of instructions that *Ss* read at the beginning of the experiment and was repeated on each page of the questionnaire. Four jobs were used to represent the two dimensions of difference—status and contact—hypothesized to be differentially important for disqualifying the socially or individually stigmatized. In the instructions, the phrase "this job involves the enforcement of certain university rules" was included for high status positions and the phrase "this job involves a great deal of student contact" for the high contact positions. The four jobs were "Assistant to the Dean" (high status, low contact), "Assistant Senior Tutor" (high status, high

contact), "driver in the university mail service" (low status, low contact), and "server in the food service" (low status, high contact). The 40 *Ss* were randomly assigned to the four job conditions, 10 to each.

Following completion of the 91 paired comparisons, *Ss* answered a short list of demographic questions and indicated the letter of the stimulus person that was "most like yourself." They were then briefly interviewed as to the meaning of their judgments to them, and the bases on which they felt they had judged the applicants. After their questions were answered, they were debriefed and dismissed.

2. Data Analysis

The multidimensional scaling methods used here are well described in Carroll (7, 8). The INDSCAL (individual differences scaling) program attempts to place the n (here, 13) stimulus points in a k -dimensional space (k is chosen by the user) in such a way that the points corresponding to stimuli judged by a *S* to be similar are grouped together, and those judged to be dissimilar are far apart. The function relating distances in the stimulus space to *Ss*' similarity judgments is a nonmetric, monotone regression; thus, the similarity judgments are treated as only ordinal in nature. INDSCAL allows each *S* a differential weighting of the dimensions of the stimulus space in the computation of the distance function. This reflects the fact that some dimensions of difference among the stimuli may be more salient for some *Ss* than for others. For instance, one *S* may see blacks as very different from whites, while males do not differ much from females; for another *S*, the weights may be reversed. Carroll (7) calls these "differing perceptual structures." These weights were used here to infer the relative centrality of social and individual stigma in the global personality judgments of our *Ss*.

The PREFMAP (preference mapping) program uses the stimulus coordinates generated by INDSCAL and the forced choice preference data to attempt to place an "ideal point" for each *S* in the stimulus space by a generalization of Coombs' unfolding model (10).² The stimuli closest to the ideal point are the most highly preferred. The output of PREFMAP is the coordinates of the ideal point for each *S*, which reflect *S*'s "different ways of using their perceptual structures" (7). For example, although two *Ss* may agree in seeing males and females as very different, one may prefer females to males for a particular job, while the other prefers males to females. This

² This describes Phase III of PREFMAP. Phases I, II, and IV are other models, ranging from more (I, II) to less (IV) general, that can be applied to preference data.

would show up in different placements of the two *Ss'* ideal points. From such differences between those rating applicants for different jobs we would infer situation specific evaluation rather than consistent preferences.

The residuals from the INDSCAL-PREFMAP model are also substantively interesting. PREFMAP gives the distances in the stimulus space from each *S's* ideal point to each stimulus, and one can regress the actual preference scores on these distances to obtain a residual score for each *S*. Group differences in the residuals in preference for stigmatized versus nonstigmatized persons would indicate that differential preference persists even after controlling for the stimuli's positions in the space. That is, two stimuli may be rated as quite similar and so placed near each other, but one of them (perhaps the nonstigmatized) might be systematically preferred over the other to a greater extent than could be accounted for by their differences from the ideal point. In some ways, the effects which appear in the residuals from the model are the most interesting of all, as they tap affective reactions that are revealed in preference despite a cognitive judgment of equivalence or equal suitability between two stimuli. Thus, blacks may be judged as quite similar to whites, but nonetheless, consistently underpreferred for some or all jobs.

C. RESULTS

In the present data, a three-dimensional INDSCAL solution explained 39.1% of the variance in similarity judgments.³ Since four dimensions explained only 41%, only three dimensions were retained. Two of the three reflected manipulated stigmata: dimension 2 separated males from females ($t_{11} = 3.17, p < .01$), and dimension 3 distinguished blacks from whites ($t_{11} = 2.21, p < .05$). Dimension 1, however, was more important to *Ss* than the experimentally manipulated dimensions and reflected an introverted-extroverted factor. The sample description, for instance, was placed quite far to the introverted side of this continuum. *Ss* seemed to be very aware of making judgments along this dimension. In the postexperimental interview, most of them claimed to be concerned about gregariousness to the exclusion of all other concerns, a claim which is belied by the emergence of both a sex and a race dimension of judgment. Individual stigmata, however, did not form a salient dimension of similarity. Thus the INDSCAL model indicates that race and sex are more central to global person percep-

³ Though the actual fitting of the INDSCAL model assumes only ordinal similarity data, as mentioned above, interval-level statistics, such as percent of variance explained, furnish the best guide to the appropriate number of dimensions.

tion than individual stigmata, but less central than an impression of friendliness. What we are terming introversion-extroversion may be closely related to Asch's warm-cold dimension (1) which appears to be the single most central element in person perception.

As noted, INDSCAL allows Ss to weight differentially the dimensions they use for judgments. We tested for two different types of differential weighting. Weights given to the dimensions might vary on the basis of the job category for which the Ss were rating the applicants or on the basis of certain background characteristics of the S raters themselves. Dimensions 1 and 2 were found to be weighted equally by Ss regardless of the job under consideration or their own characteristics. Dimension 3, race, tended to be of highest salience for those filling the two low-status jobs of driver and server ($F_{1,6} = 2.30, p < .10$). Race was also more salient for male Ss than for females ($F_{1,18} = 7.73, p < .01$). Thus there appear to be only small group differences in how the stimuli were perceived.

Turning to the PREFMAP solution, we find a highly significant fit to the average of all Ss' preference values ($F_{1,4} = 30.08, p < .001$), though not a significant fit to every individual S.⁴ The average (root mean square) correlation between the fitted distances and the actual preference scores for the 40 Ss was $r = .69$. No significant differences between the ideal points for the four different jobs appeared on any of the three dimensions. Individual preference differences thus appear to be due more to differential cognitions (i.e., differences in INDSCAL weights) than to differential evaluations of such differences.

The analysis of the residuals from the INDSCAL-PREFMAP model indicates the extent to which an S over or underprefers a stimulus, given its distance from the S's own ideal point. Such judgments, insofar as they are systematic, represent a bias in choice that might well be labelled discrimination. The three dependent variables are (a) "sex bias," the difference between the mean preference for the white male nonstigmatized (WMN) stimuli and the mean preference for females; (b) "race bias," the difference between WMN's and blacks; and (c) "stigma bias," the difference between WMN's and the individually stigmatized. Each type of stigma is thus being compared to the same baseline group, so that blacks are not being compared against females or the individually stigmatized and *vice versa*. Two planned contrasts of the four jobs were used: status (Assistant Senior Tutor and Assistant to the Dean vs. driver and server) and Contact (Assistant

⁴ The F for the increment in variance explained by the more general Phase II model over the Phase III model used here was approximately zero.

Senior Tutor and server *vs.* Assistant to the Dean and driver). Table 1 presents these contrasts, as well as a comparison between the Assistant Senior Tutor and all others.

Empirically, it appears that Ss' preferences for stimuli are not just a function of the stimuli's judged similarities and the Ss' different ideal points, but also reflect systematic deviations from the model, which appear in the residual scores analyzed here. The third comparison of group means, "Assistant Senior Tutor *vs.* others," seems to reflect the trend in the data quite well, as the other three means are generally close together. This effect could be explained in two ways. First, there may have been two main effects and an interaction making the high status, high contact cell different from the other cells. Alternatively, the "Assistant to the Dean" manipulation may have failed. Comments by several Ss in the postexperimental interview seem to indicate that the job was seen as a secretary's job with a big title but fairly low actual status. The weak race bias effect in the status comparison tends to support the latter interpretation.

The contact dimension in jobs produced no significant effects, either for the individually stigmatized where such effects had been hypothesized, or for either blacks or women. No significant effects on stigma bias were found for either of the other contrasts either. It appears likely that the individual stigma manipulations and/or the contact variable were not very salient or "frightening" to Ss faced with a pencil and paper task. Since they knew that they would have to interact with the stimulus persons, they may

TABLE 1
ANALYSIS OF RESIDUALS FROM THE FITTED MODEL

Measure	Sex bias	Race bias	Stigma bias
Status high, contact high (Asst. Senior Tutor)	.47	<i>Means^a</i> .49	.01
Status high, contact low (Asst. to Dean)	-.20	-.09	-.03
Status low, contact high (Server)	-.33	-.49	-.17
Status low, contact low (Driver)	.06	.09	.20
		<i>t values, p levels^b</i>	
Status comparison	<1	1.55 (.10)	<1
Contact comparison	<1	<1	<1
A.S.T. <i>vs.</i> others comparison	1.78 (.05)	2.20 (.025)	<1

^a A higher mean indicates a greater relative preference for white male nonstigmatized stimuli over females, blacks, and stigmatized persons respectively.

^b All *t*'s are based on 36 *df* (*p* levels are one-tailed).

not have been able to predict accurately how they would feel about them in an actual face-to-face interaction.

Substantively, the analysis of residuals indicates that white males, whether or not individually stigmatized, were overpreferred for the high status, high contact position of Assistant Senior Tutor. Blacks and women were preferred as servers in the cafeteria. Women also appear to have been preferred for the secretary-like job of Assistant to the Dean. There may also have been some tendency for Ss to prefer the nonstigmatized, regardless of race or sex, for the position of driver for the mail service, but it is unclear why this should have been the case.

D. DISCUSSION

Despite some common problems of impression management they may produce, it appears that all stigmata are not alike. Social stigma, or membership in a disvalued group, appears to have been more central in the S's global impression formation than an individual stigma. Even though important, social stigma was still not as central as personality type (introversion-extroversion). Race as a dimension of perception appears to have been more salient to males and to those who were filling low status jobs, where there was a slight tendency to prefer blacks. Race and sex were not especially *salient* to those filling the position of Assistant Senior Tutor, despite the fact that the analysis of the residuals indicates that blacks and women were being systematically underpreferred. Perhaps college students are more willing to be self-conscious about their use of race as a dimension of judgment when they feel themselves to be acting in a socially desirable way by preferring a black (for a low status job). Such students may have found race salient because they were "leaning over backward" to suppress the prejudice they felt (25). Ironically, if their preferences had formed the basis for actual hiring decisions, the job stereotyping of the real world would have been reproduced: a white male in the highest status position, a female in the intermediary position, and a black in the low status, personal service position.

Although it appears in this context that only social stigma affected interpersonal judgment, it may well be that the pencil and paper task was not well suited to produce the realistic sense of personal discomfort which researchers find characteristic of interaction with the individually stigmatized. In the absence of such personal discomfort, individual stigma may not be taken into account. Thus, while a personal interview for a job may

work to the advantage of socially stigmatized applicants, since personality factors may be more readily communicated, it may work against the individually stigmatized by making salient factors which appear to be ignored in a paper and pencil format.

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ATTITUDINAL ENTAILMENT AND RESISTANCE TO CHANGE¹

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SUMMARY

An examination has been made of the relationship between resistance to attitude change and attitudinal entailment, which is the extent to which a particular attitude is related to other attitudes and beliefs. Male and female college students ($n = 144$) estimated either entailment, psycho-logic (the unique series of syllogisms necessary for an attitudinal conclusion), or neither of these two concerning three hypothetical people with opinions on different issues. The Ss then did or did not (change manipulation) estimate how these people would react to counterattitudinal information. The rating scales completed at the end of the experiment showed that increasing entailment increased resistance to change both concerning predictions about the hypothetical people and, more importantly, concerning the Ss' own attitudes. Increasing psycho-logic or neither entailment nor psycho-logic did not increase resistance to change (all p 's $> .05$). This pattern held for all three issues (hypothetical people). These results support the hypotheses of this paper, a component of Jones and Gerard's model of attitudes, and McGuire's principle of anchoring.

A. INTRODUCTION

Attitudinal entailment may be defined as the extent to which a particular attitude is related to other attitudes and beliefs that are not part of the specific quasi-logic or psycho-logic governing why a person holds that particular attitude (7). The more attitudes and beliefs that influence or are influenced by the particular attitude, but are derived from different syllogistic paths, the greater the attitudinal entailment of that attitude. Sup-

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pose, for example, that a person holds two attitudes: "Cheese is good to eat" and "Socialism is the most viable economic system." If the person could conceive of no related attitudes to the first attitude but has views on environmental issues and literature that are closely related to the second attitude, the second attitude would have greater attitudinal entailment than the first. The entailment of a particular attitude, then, is a function of the extent to which it belongs to a cognitive structural syndrome.

The concept of attitudinal entailment is similar to the concept of the strength of an attitude (5, 8; see also 1). Jones and Gerard describe strength as the "capacity to resist change and therefore influence other cognitions" (5, p. 62). They point out that the attitudes of many Southerners favoring segregation are strong in this sense, since these attitudes often bring about change in other beliefs. Many such changes may be described as rationalizations. The greater the number of syllogistic paths to the same attitudinal conclusion, the greater the strength of the attitude.

With respect to attitude change, the concept of entailment differs from the concept of strength in terms of testability; whereas a strong attitude is by definition resistant to change, attitudinal entailment is not defined in such a way as to preclude a test of its relationship to resistance to change. Whether a highly entailed attitude is resistant to change is an empirical question.

The hypothesis that a highly entailed attitude is resistant to change is certainly tenable. Since several types of cognitive consistency theories have successfully predicted that changing one attitude also influences other related attitudes (e.g., 9, 14, 16) through a process in which change on a manipulated attitude "filters down" to other related attitudes, it would also be reasonable to expect that the related attitudes would influence the ease with which the first attitude could be changed. To extend the metaphor, if the filters through which a change manipulation must pass are thick and impede the flow of change, the change manipulation would "spill out" before "washing away" the old attitude. Some empirical support for this position exists (10, 12).

The theoretical relationship between attitudinal entailment and resistance to change becomes somewhat more involved, however, when one also considers another term that Jones and Gerard have proposed—cognitive differentiation. Cognitive differentiation is the antithesis of strength with respect to resistance to change in Jones and Gerard's syllogistic model of attitude change. Here the variability is in the degree to which the cognitive structure results from a linear, detailed, and unique series of

psychological syllogisms. A strong attitude can withstand frequent and powerful assaults, but a highly differentiated attitude, similar to the proverbial house of cards, tumbles if any one of the supporting syllogisms is removed. Thus, the fewer cognitions related to an attitude that are psychologically necessary for the development of that attitude, the more resistant to change that attitude should be. So not only the number of related attitudes but also the type of related attitudes should be considered. If the related attitudes are a necessary part of the psycho-logic behind the attitude one is attempting to change, more related attitudes should lead to less resistance to change. This theorizing of Jones and Gerard contradicts that of Tannenbaum (15), who proposed that bolstering the specific logic behind an attitude should increase that attitude's resistance to change.

As with strength, the concept of cognitive differentiation is untestable because by definition increased cognitive differentiation decreases resistance to change. The term psycho-logic is therefore used here, rather than cognitive differentiation, to refer to the chain of logic or quasi-logic that a person deems necessary for the development or rationale of a particular attitude. The more extensive the psycho-logic behind a particular attitude, the less resistant to change that attitude should be. A further reason for the preference for the terms used here over the terms that Jones and Gerard use is that strength and cognitive differentiation are often confounded with each other when applied to real attitudes.

In a previous study (6) *Ss*' attitudinal entailment concerning the impeachment of President Nixon was measured. After *Ss* were divided into high and low entailment groups, half of each group read a persuasive message concerning impeachment. For half of the *Ss* this message was expected to create imbalance or inconsistency (3). The *Ss* with low entailment who read a relevant persuasive message that was expected to create inconsistency changed their attitudes about impeachment significantly more than *Ss* in the same conditions except for reading an irrelevant message. The impact of the relevant *versus* irrelevant message was not different for high entailment *Ss*, regardless of whether the relevant message was expected to create inconsistency or to be consistent, and it was not different for low entailment *Ss* when the relevant message was expected to be consistent with the *Ss*' prior attitudes. This study, therefore, provided some evidence that attitudinal entailment is an important variable in attitude change.

The present study is designed to extend the results of the previous study (6) to a situation where attitudinal entailment is manipulated rather than

measured and where random assignment rather than dichotomization determines who has what level of attitudinal entailment. If the present study can conceptually replicate the previous study, several alternative explanations to the previous study could be ruled out.

It was hypothesized that attitudes with high entailment would be more resistant to change than attitudes with more detailed psycho-logic or attitudes toward which neither entailment nor psycho-logic was manipulated.

B. METHOD

1. *Subjects*

The Ss were 146 introductory psychology students at a large university in the Midwestern region of the United States who participated to earn experimental participation credit. They participated in groups of approximately 25. Two Ss were eliminated for failure to complete all of the rating scales, leaving a design with an equal n per cell.

2. *Cover Story*

When Ss arrived, they received a booklet with a cover page that explained that the study in which they were about to participate dealt with person perception. It explained that often when we meet someone for the first time we may learn very little about the person, but that we may later be asked to make a judgment about him. The Ss learned that they would make judgments about three people about whom they could know only one opinion held by each. They were told that Person A believes, "Many new strains of hybrid house plants will be available to consumers in the next decade"; that Person B believes, "An increasing proportion of students will attend universities in their own states rather than out-of-state universities"; and that Person C believes, "It is unlikely that a number of Catholics and Protestant denominations will join in a religious confederation."

3. *Attitude Type Manipulation*

On the second and third pages of the booklet, Ss encountered the Attitude Type Manipulation. They were asked to estimate what two of the three people's attitude might be like in more detail. Specifically, half of the Ss estimated what related attitudes (entailment) two of the three people might have; the other half of the Ss estimated what reasoning (psycho-logic) might have led two of the three people to their attitudes. The instructions gave detailed descriptions and examples of either entailment or

psycho-logic. No *S* estimated both entailment and psycho-logic, in order to minimize demand characteristics. Each *S* estimated neither psycho-logic nor entailment, as a control issue, on one of the three issues (people). On which one of the three issues *Ss* ventured no estimates, and in what order *Ss* estimated the entailment or psycho-logic of the other people's attitudes (issues) were rotated randomly among the *Ss*. The *Ss* worked for seven minutes on each of these two pages. The purpose of the Attitude Type Manipulation was to make salient and to draw out for the *Ss* either the entailment or the psycho-logic for two of the three issues.

Since some factor in the instructions may have differentially influenced the interest level, difficulty level, or salience *per se* of the manipulations, the number of estimates made by *Ss* in the entailment and the psycho-logic conditions were counted by two independent judges. When *Ss* enumerated their ideas, as they were instructed to do, the judges simply counted the number of ideas enumerated. When *Ss* did not enumerate their related ideas, the sentence was considered the idea unit, except when a compound sentence or compound subordinate phrase clearly contained more than one idea.

4. Change Manipulation

On the following page(s) *Ss* encountered the Change Manipulation. They were asked to predict how the person specified on the page (Person A, B, or C) would react to a brief newspaper article which provided information contradictory to that person's attitude. The newspaper article for Person B, for example, claimed that the federal government would begin to provide massive financial aid to students who attend schools outside of their home state and that the federal government would sponsor a major advertising campaign promoting the virtues of studying at schools away from one's home, such as wider cultural experiences. Half of the *Ss* predicted the reactions for one of the three people, and half predicted the reactions for two of the three people. This division was necessary to achieve a balanced design, since there were three levels of the Attitude Type independent variable and two of the Change Manipulation variable, all complexly mixed as both within- and between-*Ss* variables. The person(s) about whom *Ss* made predictions rotated randomly from *S* to *S*, as did the order in which *Ss* made their predictions when they predicted the reactions of two of the other people. The *Ss* spent seven minutes completing each prediction.

Although the same *Ss* rated each of the three issues (people), the data for

each issue were analyzed separately, since the addition of the within-Ss variables would have necessitated the addition of the between-Ss counterbalancing variables as well. No differences were hypothesized concerning these variables, and their inclusion would have exceeded the limitations of the available computer program. While these variables served important purposes for the design, they lacked inferential value.

5. *Summary of Independent Variables*

Each *S* was in one of six independent variable cells for each of the three issues (people) in this 3×2 design. For the Attitude Type independent variable, the *Ss* estimated either (a) entailment, or (b) psychology toward two issues, and (c) neither Attitude Type toward the third. They then (a) predicted, for the Change Manipulation independent variable, how either one or two of the three people (issues) would react to information which contradicted the initial attitude attributed to each particular person for each of the three issues, and (b) did not make predictions about the other issues. This 3 (Attitude Type) \times 2 (Change Manipulation) design was repeated for each of three issues, although the specific cell in which a particular *S*'s responses fell varied from issue to issue.

6. *Dependent Variables*

a. *Other ratings.* When *Ss* had completed their predictions they rated how each of the three people would respond to five statements relevant to the initial attitudes, after reading the newspaper article(s) previously mentioned. Three of the statements in each of the three sets of five statements were worded positively, so that the particular person would be expected to agree with the statement, and two were worded negatively. The *Ss* used a scale for these ratings ranging from agree (= 1) to disagree (= 9). Each of these three sets of five ratings was summed separately, after correction for direction on the two negatively worded statements, before any analyses were carried out on these dependent variables.

b. *Own ratings.* Next the *Ss* were told, "Since your own attitudes and beliefs may influence how you perceive others, we are now asking you to answer the same statements as you yourself actually feel." The *Ss* rated their own attitudes toward the 15 questions (Own ratings) using the same scale which they had used when rating the attitudes of the other people. The Own ratings were prepared for analyses in the same manner as the Other ratings, again after reversing the ratings of the negatively worded statements.

Conceptually, the Own ratings were the primary dependent variable and the Other ratings served more as a manipulation check. The data for Own and Other ratings were analyzed separately because of this conceptual difference. From the perspective of the Ss, the change manipulation was explicitly directed toward the Other ratings; hence, these data are susceptible to the traditional arguments against role playing research (e.g., 4, 11). However, social comparison and salience, rather than Ss' predictions and expectancies, should be the source of attitude change observed on the Own ratings.

Finally, Ss completed a funnel-type postexperimental questionnaire (13), heard the debriefing, and received their experimental participation credit.

C. RESULTS

1. Preliminary Analyses

No Ss were judged aware from the postexperimental questionnaire, and no Ss were judged to have hypotheses about completing the Own ratings which were correlated with actual experimental hypotheses.

The Ss in the entailment and psycho-logic conditions did not differ in the number of estimates ventured [$t(143) = 7.3$], hence, differences between these conditions are apparently not due to interest level, effort level, or salience *per se*.

Although planned comparisons (2) rather than analyses of variance were considered to provide more appropriate tests of the hypotheses in this study, 3×2 (Attitude Type \times Change Manipulation) analyses of variance were calculated from the data summarized in Table 1 on both Other ratings and Own ratings to discover whether any overall significance existed in each set of data, as prior conditions for computing the planned comparisons. For the Other ratings a significant main effect for the Change Manipulation was found for issue (person) A [$F(1, 138) = 20.2, p < .05$], for issue B [$F(1, 138) = 13.21, p < .05$], and for issue C [$F(1, 138) = 7.82, p < .05$]. The only other F ratio to attain significance at the .05 level in the Other ratings was the Change \times Type interaction for issue C [$F(2, 138) = 3.53, p < .05$]. For the Own ratings there was likewise a significant main effect for the Change Manipulation for issue A [$F(1, 138) = 9.63, p < .05$], for issue B [$F(1, 138) = 15.28, p < .05$], and for issue C [$F(1, 138) = 8.72, p < .05$]. There was also a main effect for Attitude Type for issue B [$F(2, 138) = 4.43, p < .05$] and for issue C [$F(2, 138) = 4.34, p < .05$]. The only other

TABLE 1
CELL MEANS

Attitude type	Person A		Person B		Person C	
	EX	CO	EX	CO	EX	CO
			<i>Other ratings</i>			
Entailment	16.7	15.0	27.5	25.4	26.1	26.7
Psycho-logic	22.0	12.6	30.5	27.1	29.3	25.1
Neither	20.5	13.5	30.5	26.4	29.2	26.4
			<i>Own ratings</i>			
Entailment	16.4	16.4	23.6	24.3	26.5	26.4
Psycho-logic	21.3	15.3	29.1	24.5	29.9	26.9
Neither	19.5	15.5	28.6	23.8	30.2	27.3

Note: The Change Manipulation symbols are EX = experimental group (did receive Change Manipulation) and CO = control group (did not receive Change Manipulation). The $n = 24$ for each cell. Lower numbers indicate greater agreement with the attitude initially attributed to the other person.

significant effect at the .05 level for the Own ratings was the Change \times Type interaction for issue B [$F(2, 138) = 4.59, p < .05$].

2. *Planned Comparisons*

The results from the planned comparisons clarify considerably the interpretation of these analyses of variance because in all cases the 30 planned comparisons followed the hypothesized patterns. [In this paragraph *significant* means $|t| (138) > 2.10, p < .05$, and *not significant* means $|t| < 1.40$.] The means for the experimental and control groups on the Change Manipulation within the entailment Attitude Type conditions do not differ significantly, whereas the experimental and control groups do differ significantly among Ss who estimated either psycho-logic or neither entailment nor psycho-logic, with the Ss who encountered the Change Manipulation (experimental groups) showing greater change away from the attitude initially attributed to Persons A, B, or C than the Ss who did not encounter the Change Manipulation (control groups) on that particular issue. Within the experimental groups Ss who estimated entailment showed significantly less change away from the attitudes initially attributed to Persons A, B, and C than did the appropriately weighted combination of Ss in the psycho-logic or in neither Attitude Type condition. Ss who estimated entailment predicted less change following exposure to contradictory information for Persons A, B, and C; more importantly, these Ss were significantly less influenced themselves on the Own ratings following estimation of entailment by the exposure to the contradictory information. Since the attitudes of Persons A, B, and C were stated in a way that other

Ss from an introductory psychology class at the same university who had participated in a pilot survey had rated favorably, it may be inferred that Ss not only predicted the resistance to attitude change in the entailment Attitude Type condition for the experimental group for Persons A, B, and C (Other ratings), but they also gained resistance to change themselves from the Attitude Type manipulation of entailment (Own ratings).

D. DISCUSSION

The previous study (6) and this one converge in supporting the hypothesis that high attitudinal entailment leads to resistance to attitude change for college students. In the previous study Ss for whom the persuasive message created imbalance showed attitude change toward balance only when they also had low attitudinal entailment. Although that study may be open to the usual problems of correlational data, in the present study random assignment to a high entailment condition also produced resistance to attitude change following a change manipulation, whereas estimating psycho-logic or nothing did not produce resistance to change. Whether other types of change manipulations besides the counterattitudinal information type of the previous study and the social comparison and saliency type of this study would also lead to similar results is a question for future research, although a direct and powerful manipulation of attitudinal entailment may raise certain ethical issues. Nevertheless, such an experiment could eliminate the possibility that some type of social expectancy undetected by the postexperimental questionnaire may have influenced the results here.

This study provides evidence for the utility of Jones and Gerard's (5) theoretical discussion of dimensions along which attitudes may vary. Although they elaborated several dimensions of variability among attitudes without any immediate supporting empirical evidence, the difference between the entailment and psycho-logic conditions can be derived directly from their discussion of the differences between strength and cognitive differentiation. Of course, as Jones and Gerard note, most "real" attitudes involve complex combinations of strength and cognitive differentiation elements in which the two frequently vary together.

McGuire's (10) theory that anchoring beliefs to other cognitions should induce resistance to persuasion is also supported by the results of these studies. He proposed that linking an opinion to accepted values, other beliefs, and valenced sources or reference groups should all induce resistance to persuasion. Here linkage or anchoring to other beliefs did diminish

the change manipulation, and in the previous study (6) previously anchored beliefs induced resistance to persuasion as well. An implication of the present study, however, is that the specific type of cognition to which an opinion is anchored is important. If one lengthens the psycho-logic or the cognitive differentiation necessary to derive a particular opinion or attitude in the process of anchoring, resistance to persuasion may well decrease rather than increase, although here the psycho-logic condition did not differ from the control condition.

Tannenbaum (15) suggests that providing Ss with specific arguments should increase the resistance to change. He presents data to support his hypothesis, and he interprets these data as contrary to inoculation theory (10). Inasmuch as "arguments" and psycho-logic are similar, his data are also inconsistent with the data here. Because Tannenbaum does not present the exact arguments that he supplied his Ss, it is possible that his Ss' attitudes also increased in entailment from the arguments they received. If such is the case, his results would not be contrary to the present paper nor to inoculation theory. Bolstering the logic behind an attitude should decrease resistance to change only when the psycho-logic changes are not confounded with changes in entailment.

The value of additional research on resistance to attitude change is at least as great as the value of additional research on attitude change. For people who fear that psychology may be creating a behavior control monster or a 1984-type society, the study of countercontrol clearly provides a basis for optimism.

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INDIVIDUAL DIFFERENCES IN SELF PERCEPTION AND THE JOB LIFE SATISFACTION RELATIONSHIP*

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SUMMARY

This study investigated the relationship of self perception to job life satisfaction. Eighty-four male engineers completed (a) the Job Description Index (JDI), (b) a measure of life satisfaction, and (c) the Thompson Biographical Information Blank (BIB). Two sets of parallel analyses were performed in order to assess the moderating effect of individual differences in self perception upon the job-life satisfaction relationship. First, *Ns* were divided at the median with respect to the distribution of BIB scores into high and low self perception groups and differences in correlation pairs were examined. Second, to cross-validate the results obtained, moderated regression analyses were performed to assess further the statistical significance of each of the moderating effects achieved. The data indicated a significant positive relationship between JDI satisfaction with supervision and satisfaction with life in general as moderated by high self perception. Self perception was also found to moderate the relationship between overall job satisfaction and JDI satisfaction with both co-workers and supervision. These results were related to Korman's self-consistency hypothesis of work behavior, as well as to Super's self-implementation theory of vocational choice.

A. INTRODUCTION

For at least three decades an area of continuing concern in social psychology has been the interrelationship of job attitudes and life satisfaction.

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Early work by Friend and Haggard (6, 7) was concerned with identifying the common ground between job satisfaction and general emotional adjustment. More contemporary research has investigated the role of community variables (11), the importance of selected occupational factors (12, 13, 15), and the influence of sex differences (14) on the job-life satisfaction relationship.

Perhaps the most complete data in this area can be derived from Kornhauser's (16) investigation of the mental health of over 400 Detroit area workers. Skilled and unskilled workers were interviewed concerning their employment and the satisfaction they gained from both their work and life in general. Intercorrelations of responses to questions regarding satisfactions in different sectors of life showed job satisfaction and life satisfaction to be positively correlated ($r = .58$). In interpreting these data, Kornhauser concluded that the available evidence favored the existence of a "spillover" rather than a "compensatory" relationship between job and life satisfaction: workers who experienced discontentment in their work did not compensate for this lack of psychological gratification by finding satisfaction in other aspects of their life, but rather were more likely to experience a greater incidence of unhappiness in nonwork activities.

Although the relationship between job satisfaction and life satisfaction has been the subject of past research, an important area of concern yet to be fully investigated is the effect individual differences in self-perception have upon this association (8, 22). On the basis of theories of cognitive balance (10) and dissonance (5), it can be proposed that self-perception may affect the interrelationship of job attitudes and life satisfaction. Likewise, consistency theory (17) would suggest the individuals find most satisfying those activities that are congruent with their self-cognitions. This reasoning is also consistent with Super's (24) "self-implementation" theory of vocational choice. The fundamental construct underlying this theory is that personal adjustment is dependent upon the successful translation of one's self into vocational terms. This "translation," in turn, is seen by Super (25) as being fundamental to the job-life satisfaction relationship. Super maintains that "satisfaction in one's work and on one's job depends upon the extent to which the work, the job, and the way of life that goes with them, enable one to play the kind of role that one wants to play" (25, p. 189). The present study was designed to expand understanding in this area by exploring the relationship between self-perception and job-life satisfaction.

B. METHOD

1. Subjects

The sample consisted of 84 professional male engineers enrolled in a two-day developmental program sponsored by the engineering extension service of a major Southeastern university. They were employed in both the private and governmental sectors. Their ages ranged from 25 to 67, with a mean of approximately 39.

2. Questionnaires

a. Job satisfaction. The Job Description Index [JDI (23)] was used to measure five separate dimensions of job satisfaction: satisfaction with opportunities for promotion, satisfaction with co-workers, satisfaction with supervision, satisfaction with pay, and satisfaction with the work itself. The JDI is a cumulative point adjective checklist measure of job satisfaction. It has been repeatedly shown to possess adequate convergent and discriminant validity for individual analysis (21).

b. Life satisfaction. This measure, developed by Iris and Barrett (13) following the lead of Kornhauser (16), includes four items assessing attitudes toward satisfaction. While the limitations of using single item scales are recognized (e.g., reliabilities cannot be measured), it was deemed desirable to utilize this format in order to maintain continuity with previous research. Each item was interpreted with the use of a five-point scale ranging from "completely satisfied" to "very dissatisfied."

c. Individual differences in self-perception. The Thompson (27) Biographical Information Blank (BIB) was used to gather individual differences information regarding respondent's self-perceived background experiences and expectations. The BIB is a 14-item biographical data inventory covering antecedent life experiences (19, 20). Individual scale items deal with, for example, the self-assessment of respondent potential, perceived values gained from education attained, and self-judged personal preferences. The BIB was constructed, with the use of factor analytic techniques, on the assumption "that an individual's background of experience and appraisal of abilities would combine to form a measure of his self-perception and, hence, an indication of the types of treatment the individual would expect" in response to various stimuli (27, p. 349). A detailed description of the development and reliability of the BIB measure is provided by Thompson

(26) For example, it has been found to be statistically related to other similarly developed self-measurement instruments. In the present sample, the BIB demonstrated a coefficient alpha reliability of .68. Although opinion varies somewhat on standards of reliability, Nunnally (18) advises that in early stages of research on a construct, reliabilities as modest as .50 or .60 are acceptable, although reliabilities approaching .70 (as is the present case) are preferable.

3. Procedure

Questionnaires were administered at the initial meeting of the two-day session. Although the general nature of the study was explained, the hypothesis and the variables to be analyzed were not mentioned. Ss were requested to follow the written instructions on each questionnaire and to answer all questions. All Ss remained completely anonymous.

C. RESULTS

Two major sets of parallel analyses were conducted. In the first set, Ss were partitioned at the median with respect to the distribution of BIB scores into high and low self-perception groups, $t(82) = 13.14$, $p < .001$. The significance of differences in correlation pairs was then examined to assess moderating effects (9). Product-moment correlations between JDI subscale scores and satisfaction with life in general, with family, with leisure activities, and with overall job satisfaction are presented for each group in Table 1. Of particular note are the contrasting response patterns of the two groups. For the high self-perception group, there was in general a significant and positive relationship, corresponding to that reported by Kornhauser (16), between JDI job satisfaction and overall life satisfaction. Noticeably, however, a similar relationship was not revealed for those classified as low in self-perception. For this group, none of the correlations between JDI job satisfaction and overall life satisfaction were significant, and most were rather low. The moderating effect of self-perception on certain aspects of the relationship between job satisfaction and overall life satisfaction is apparent. The correlations between satisfaction with both co-workers and supervision and overall life satisfaction were significantly different for the two groups.

The between group variation in correlations for the five JDI subscales and overall job satisfaction is also of particular interest. The relationships between satisfaction with both co-workers and supervision and overall job satisfaction were significantly moderated by self-perception, with the rela-

TABLE 1
CORRELATIONS AND DIFFERENCES IN CORRELATIONS^a BETWEEN JOB SATISFACTION AND
LIFE SATISFACTION FOR HIGH AND LOW SELF PERCEPTION GROUPS

Job satisfaction	Life	Correlates of life satisfaction		Job
		Family	Leisure	
High self-perception (<i>n</i> = 40)				
Promotion	.23	-.18	-.01	.36*
Co-worker	.57*** ^b	.13	.18	.65***
Supervision	.46***	-.13	.38*	.52***
Pay	.31*	.10	-.07	.36*
Work	.42**	.17	.04	.61***
Low self-perception (<i>n</i> = 44)				
Promotion	-.07	-.01	.16	.06
Co-worker	.20	-.08	.11	.16
Supervision	-.16	.10	.06	-.01
Pay	.07	.12	.04	.12
Work	.24	.11	.19	.41**

^a Differences in correlation pairs were evaluated with Fisher's *Z* transformation and test (9).

^b Significance of differences in correlation pairs was $p < .05$

^c Significance of differences in correlation pairs was $p < .01$

* $p < .05$.

** $p < .01$.

*** $p < .001$.

tionships being more positive for the high self-perception group. For high self-perception Ss, positive and significant correlations were found between all JDI subscales and overall job satisfaction. In contrast, for those Ss low in self-perception, only the correlation between JDI work itself and overall job satisfaction was significant.

Before evaluating these results, it should be noted that Zedeck (28) has cautioned—because of numerous pitfalls (e.g., abnormal distributions, nonlinear relationships, etc.) associated with moderator variable research based on separate correlational analyses of subgroups formed by dividing a continuous qualitative variable—that results obtained in this manner should always be cross-validated. Accordingly, in the second set of analyses, moderated regression techniques were used to assess further the statistical significance of the moderating effect of individual differences in self-perception. Statistical tests employed to compare the multiple correlation coefficients yielded in such regression analyses are indicated by Cohen (1).

Given the outcome of the initial subgroup correlational analysis, moderated regressions were calculated concerning the two areas of life satisfaction (life in general and overall job satisfaction to satisfaction with co-workers and satisfaction with supervision) for which earlier results had indicated self-perception was a significant moderator. The outcomes of the

moderated regressions generally, though not completely, confirmed those of the initial correlational subgroup analysis. Table 2 presents the R values for the simple, multiple (including self-perception), and moderated regressions performed. The increments in R from the addition of the interaction terms are significant in all cases except the moderated regression for overall life satisfaction to satisfaction with co-workers. In this case, the self-perception \times co-worker interaction had no effect.

D. DISCUSSION

This study aimed at further understanding in the area of job-life satisfaction by examining the moderating effect of individual differences in self-perception. Cross-validated results indicated that self-perception served as a significant moderator between (a) overall life satisfaction and satisfaction with co-workers and (b) overall job satisfaction and satisfaction with both co-workers and supervision. While the results do not allow an unqualified test of the existence of either a "spillover" or "compensatory" relationship between job and life satisfaction, they do suggest that the absence of an association between job and life satisfaction for Ss with low self-perception may stem from behaviorally related job roles which are inconsistent with their self-cognitions. Such an interpretation would be theoretically congruent with both Korman's (17) self-consistency hypothesis of work behavior and Super's (24) self-implementation theory of vocational choice. On the basis of this logic, it would appear that these individuals may have largely

TABLE 2

RESULTS OF MODERATED REGRESSION FOR GENERAL LIFE SATISFACTION, OVERALL JOB SATISFACTION, JOB SATISFACTION VARIABLES, AND SELF-PERCEPTION

Measure	Job satisfaction variables	
	Co-worker	Supervision
<i>General life satisfaction</i>		
Zero order correlation with general life satisfaction	.40	.17
R 's adding self-perception		
R_1 (linear multiple correlation)	.41	.17
R_m (moderated multiple correlation)	.43	.34
F [significance of increase ($R_m - R_1$)]	.98	3.82*
<i>Overall life satisfaction</i>		
Zero order correlation with overall job satisfaction	.39	.26
R 's adding self-perception		
R_1	.39	.27
R_m	.48	.37
F	3.64*	2.87*

Note: $N = 84$.

* $p < .05$.

segmented their behavior patterns so that attitudes developed in one setting have limited effect on attitudes developed in the other. This reasoning is also consistent with Dubin and his associates' (2, 3, 4) conclusion that for a broad range of people, self-actualization on the job is of no importance. Rather, the central focus of their life is directed at seeking satisfaction elsewhere, away from work.

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REASSURANCE: A MECHANISM BY WHICH THE PRESENCE OF OTHERS REDUCES ANXIETY*

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SUMMARY

The current investigation was designed to test the hypothesis that reassurance is at least one mechanism by which the presence of others reduces anxiety. In two separate experiments Ss (female undergraduates $n = 38$ and $n = 40$, respectively) waited to participate in an anxiety provoking shock experiment with two Cs. In one condition the Cs were reassuring and in the other they were not. Results of both experiments showed anxiety reduction only when the Cs were reassuring. Birth order differences could not be found, nor could the results of Experiment 2 confirm the hypothesis that reassurance causes people cognitively to re-evaluate the anxiety arousing situation.

A. INTRODUCTION

Since Wrightsman's (13) finding that the presence of others reduces anxiety for firstborns, few have questioned the existence or reliability of the effect. An exception is Epley (4, 5) who argued that empirical support for the phenomenon is limited and that results from the few studies attempting to verify the effect have been inconsistent [See also the rejoinder by Wrightsman (14)]. Yet the intuitive "correctness" of the relationship between presence of others and anxiety is compelling. In fact, after pointing out the paucity of data demonstrating the phenomenon, even Epley (4) went on to outline four possible explanations for its occurrence. First, companions could serve as models by demonstrating that calmness is the appropriate response to a situation. Second, other people could distract the anxious individual so that he or she does not focus on the anxiety provoking situation. Third, another person could directly interfere with the anx-

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¹ Requests for reprints should be sent to the first author at the address shown at the end of this article.

iety response. Finally, the mere presence of another person could function to reduce anxiety.

In an attempt to test at least some of Epley's (4) anxiety reduction explanations, Spector and Sistrunk (11) conducted two experiments, neither of which found anxiety reduction. These findings cast serious doubt about the existence of anxiety reduction in the presence of others as a general principle of behavior, even for firstborns.

However, it has remained difficult to accept intuitively the conclusion that there was no anxiety reduction mediated by companions, and the current study was undertaken in an effort to elucidate this seemingly illusive phenomenon. In considering situations in which one person is anxious and a companion is trying to be calming, one finds that often the companion will be reassuring. Statements such as "don't worry about it," "it's not so bad," and "if you have to, you can always leave" are common. Thus it seemed a reasonable hypothesis that reassurance by others might cause anxiety reduction.

In order to test this hypothesis, two conditions were created: one in which two companions in a waiting room reassured the S, and one in which they remained neutral and did not interact with the S. It was hypothesized that only the reassurance condition would result in anxiety reduction.

B. EXPERIMENT 1

1. *Method*

a. Subjects. Ss were 38 female undergraduate psychology students at the University of South Florida, who received class credit for participation.² Seventeen additional Ss refused to participate at the beginning of the study and were excused.

b. Procedure. When the Ss arrived at the laboratory they were escorted into a room which contained a chair, table, and shock equipment. They were told that the experiment was concerned with the effects of electric shock on task performance and that they were to receive several, rather painful electric shocks. They were asked to sign informed consent forms releasing the university from liability in case of injury. If an S agreed to participate, she was asked to complete the state scale of the State-Trait

² It should be recognized that the population sampled was limited to a single culture and sex. Generalization should be done cautiously.

Anxiety Inventory³ and answer a question which required her to pick a number from 0 to 100 representing how ill-at-ease she was. This question was essentially the same as Wrightsman's (13) anxiety measure. When this was completed, the *S* was told there would be a short delay, and she was taken to a separate waiting room where two other *S*'s were already seated. Experimental manipulations occurred during a five-minute waiting period. At the end of this time the *E* returned and administered a second state scale, an "ill-at-ease" question, and a questionnaire concerning birth order. The experiment was concluded at this time and *S*s were debriefed.

1) *Reassurance condition.* In this condition *S*s were reassured by the two *C*s who pretended to be *S*s in the same experiment. As soon as the *S* was seated and the *E* had left, the *C*s engaged her in conversation. During the conversation they were supportive and reassuring. Every *S* was told that "the shock couldn't be that bad," "the university wouldn't let the *E* really hurt anyone," and "if the first shock is bad, you can stop and you get your point anyway." The conversation, mostly small talk concerning courses and professors, continued during the entire five minutes.

2) *Control condition.* In this condition *S*s waited for five minutes with the same two *C*s. However, this time conversation was held to a minimum, consisting only of answers to the *S*s direct questions. *C*s remained calm and managed successfully to minimize social interaction by reading a book. No reassurance of any kind occurred.

2. Results

There were two dependent variables in the current study, and a separate analysis was performed for each. The state scale, which is a well validated anxiety instrument, was of primary interest. The "ill-at-ease" question was added so that the current results could be compared more easily with Wrightsman's (13). Data consisted of pre- and post-wait anxiety scores, and change scores for both dependent measures.⁴ The two dependent variables were correlated with each other ($r = .65$, for prewait, postwait, and change scores).

Change scores on each dependent measure were analyzed by means of a 2×2 (condition by birth order) analysis of variance. Since latter borns are more numerous than firstborns, and preselection did not occur, unequal sample size resulted. Therefore, least squares analyses of variance were

³ The authors would like to thank Charles D. Spielberger and the Consulting Psychologists Press for permission to use the State-Trait Anxiety Inventory.

⁴ These scores are available from the authors.

conducted on an IBM 360 computer with use of the "Multivariate" program (6). Interpretations of significant effects were made with the procedure suggested by Appelbaum and Cramer (2). Briefly, the procedure involves testing the two main effects twice, once with each main effect tested first, then last. The program uses Overall and Spiegel's (8) Method 3; that is, the effects are ordered *a priori*, then each effect is tested. The analysis for the state scale resulted in a significant main effect for condition only, $F(1, 34) = 4.56, p < .04, \bar{x} = 4.8$ for Reassurance, $\bar{x} = 5$ for Control. There were no significant differences for the ill-at-ease question, although the main effect for experimental condition was marginal, $F(1, 34) = 3.19, p = .08, \bar{x} = 10.6$ for Reassurance, $\bar{x} = 3.0$ for Control.

These results suggest that there were no birth order differences, and that reassured Ss tended to reduce their anxiety, as measured by the state scale, more on the average than controls. An important question not answered by the above analyses was whether both groups demonstrated a significant anxiety decrease, or if only the Reassurance Ss decreased. To answer this question *t* tests were conducted for each experimental condition (collapsing across birth order). It was found that for the Reassurance Ss anxiety decreased significantly for both the state scale and ill-at-ease question, $t(18) = 3.8, p < .01$ and $t(18) = 3.02, p < .01$, respectively. No reductions occurred in the control condition for the anxiety measures, $t(16) = .19$ and 1.3 , respectively.

3. Discussion

The results suggest that anxiety reduction did indeed occur in the presence of other people. However, it was not the mere presence of others, but their actual statements of reassurance that caused the reduction. In contrast to Wrightsman (13) firstborns did not differ in their tendency to reduce anxiety.

The failure to replicate the firstborn effect is not unique to this study. The birth order results of several studies since Wrightsman (13) have not been consistent. While Amoroso and Walters (1) were able to replicate the effect, both MacDonald (7) and Buck and Parke (3) were not. In fact Buck and Parke (3) argued that, while their data support the greater affiliative tendency of firstborns, it is probably not anxiety reduction that occurs.

An important question raised by the present study concerns the mechanism through which reassurance reduces anxiety. One possibility is that, by reassuring the S, a companion causes the S to re-evaluate the situation cognitively so that it is perceived to be less anxiety provoking; the S

perceives the shock as less painful or less likely, and escape as more available. To test this hypothesis a second experiment was conducted.

C. EXPERIMENT 2

1. Method

a. Subjects. Ss were 40 female undergraduate psychology students at the University of South Florida. Each S received class credit for participation. An additional five Ss refused to participate at the beginning of the experiment and were excused.

b. Procedure. The procedure for Experiment 2 was essentially the same as Experiment 1. That is, Ss were told about the shock in the experiment, asked to complete the anxiety measures, waited five minutes, and again completed the questionnaires. However, at this point in the experiment, an additional questionnaire was added consisting of six questions which asked for the Ss appraisal of the situation. The questions asked how many shocks the Ss expected, how severe the shocks would be, how easy, and how likely it would be for them to quit during the experiment, and how aversive they found shock to be. The experiment was again ended at this point and the Ss debriefed.

2. Results

The primary analyses of Experiment 2 were the same as Experiment 1. Change scores for both anxiety measures were analyzed with 2×2 least square analyses of variance. These measures were again correlated ($r = .78$ for prewait, $r = .72$ for postwait, $r = .52$ for change scores). As in Experiment 1, the sample sizes were unequal, and the Appelbaum and Cramer (2) procedure was used. The results of both analyses showed no significant differences for either anxiety measure between experimental conditions, or between first- and latterborns, as well as insignificant interactions between the two independent variables. However, it was noted that two Ss in the control condition had extreme anxiety change scores on the state scale. An outlier analysis was conducted with the use of Pascale and Lovas' (9) outlier program. These two observations were identified as outliers by the Grubbs Criterion at $p < .05$. The analyses of variance were recomputed omitting these two values, resulting in a significant main effect for the experimental condition, $F(1, 34) = 11.61, p < .0018$. The ill-at-ease question remained nonsignificant $F(1, 34) = 2.61, p < .12$. However, when separate t tests (including all observations) for the two experimental condi-

tions, collapsed across birth order, were conducted to test for significant departures from zero anxiety change, only the reassured Ss decreased anxiety significantly, $t(19) = 4.92$, $p < .01$, for the state scale; $t(19) = 2.10$, $p < .05$ for the ill-at-ease measure. The control Ss clearly showed nonsignificant changes on both the state scale and Wrightsman measure, $t(19) = .99$, $t(19) = .96$, respectively. Overall, the control Ss state anxiety change was approximately the same in this experiment ($\bar{x} = 1.0$) as in the first. The Reassurance state scale change was somewhat less ($\bar{x} = 2.9$). A similar pattern occurred for the ill-at-ease question ($\bar{x} = 6.8$ for Reassurance, $\bar{x} = 3.0$ for Control). However, the mean prewait scores were somewhat higher for the Reassurance Ss in Experiment 1 than Experiment 2, which may have accounted for the difference.

Analyses of variance were conducted comparing the two experimental conditions on each of the six cognitive re-evaluation variables. No differences were found between the groups on any measure. There were also no significant correlations between anxiety change on either anxiety measure and the six re-evaluation variables.

3. Discussion

The results of Experiment 2, while less clear-cut than Experiment 1, seemed to show the same basic pattern: the Reassurance manipulation was successful in producing anxiety reduction, while the control condition was not. Again, there were no birth order effects. In fact, there were nonsignificant trends toward greater anxiety reduction among latter borns. The results of both Wrightsman's (13) *ad hoc* anxiety measure and Spielberger *et al.*'s (12) well validated state anxiety scale were similar although the state scale appeared to be more sensitive to anxiety change differences between groups. This would be expected, since the reliability of a multiple-item measure is usually higher than a single item. Both would appear to be equivalent (although not equivalently good) measures, making possible comparisons between studies using either.

D. CONCLUSIONS

The results of the two experiments were quite consistent with the previous two conducted by the same investigators (11) demonstrating no anxiety reduction by the mere presence of other people in the same predicament. Furthermore, there seemed to be no birth order effects in any of these experiments. Coupled with other failures to find the birth order effect (e.g., 3, 7) it would seem that its widespread acceptance has been premature.

However, evidence for anxiety reduction in the presence of others was shown when those others were reassuring. Unfortunately, the current study was not successful in determining how reassurance reduces anxiety. It was hypothesized in Experiment 2 that the reassurance process causes the individual to re-evaluate the situation cognitively, thus interpreting it as being less fear evoking. No evidence was found to support this hypothesis in the questionnaire asking for evaluation of the situation. Ss who were reassured did not report expecting fewer shocks, less painful shocks or being more likely to leave the experiment than controls in Experiment 2. It is indeed possible that reassurance just makes people feel better, without a re-evaluation of the situation. There seems little doubt that firstborns exhibit a greater affiliative tendency than latter borns, as established by Schachter (10) and later replicated (e.g., 9). However, the results of the current study greatly weaken the supposition that anxiety reduction is the reason. While the idea is intuitively appealing, the bulk of the evidence seems to argue against it. Finally evidence for anxiety reduction in the presence of others, when they are reassuring, has been found. While other behaviors of companions may also result in anxiety reduction, their mere presence seems insufficient.

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THE EFFECTS OF PREINFORMATION ON REACTIONS TO A VIOLENT PASSAGE AND AN EROTIC PASSAGE*¹

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SUMMARY

The effect of three levels of prior information on readers' reactions to short narratives was examined. Ninety-six male and female undergraduates read and rated a violent (negatively arousing) passage, an erotic (positively arousing) passage, and an emotionally neutral passage. Preinformation consisted of either a three-line description of each passage, a brief one-line description, or no description. Sex of *S* and order of passage presentation were also varied. Major findings were that preinformation produced significant multivariate and univariate effects on *S*'s reported reactions to both the violent and the erotic passages, with the brief description leading to the strongest reactions. Uncertainty and individually generated thoughts may have a role in this preinformation effect.

A. INTRODUCTION

Storytelling is an ancient practice which today finds expression in many forms. Novels, short stories, movies, and anecdotal speeches are common examples where the skillful revelation of a narrative sequence of events can produce a moving experience. Yet aside from psychoanalytic research (12), the vicarious emotional experience produced by prose material has been relatively unexplored as a phenomenon in its own right. The relevant experimental research which does exist deals primarily with theories of emotion, rather than with psychological factors found in narrative impact.

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Some related literature has developed around Schachter's (17) two-factor theory of emotion. Schachter and Wheeler (18), for example, employed a humorous film to investigate the effects of a pharmacologic stimulant or tranquilizer, and the impact of information about these drugs' effects on laughter and ratings of the film. *Ss* who were misinformed about the nature of the stimulant's effects laughed more and rated the film as funnier. While these and other studies (e. g., 10) principally were tests of Schachter's two-factor theory, they suggest that the impact of a humorous film is affected by prior instruction.

Zillmann and his colleagues have employed mostly films (e.g., 4, 23) but also passages and cartoons (3) and music (2) to test an extension of the two factor theory of emotion. Rather than inducing physiological arousal by means of a drug, these researchers used preliminary stimuli, such as a film, and have studied "excitation transfer" to a second stimulus of this sort. Films were classified on two orthogonal dimensions, arousal and hedonic tone. Arousal was defined as the extent to which the film would induce physiological arousal in the viewer, and tone as the positiveness or negativeness of the film. Hedonic tone, assumed by Zillmann to be a purely cognitive variable, was important because similarity or differences in tone could be a factor in determining whether *Ss* attributed initial arousal correctly to the first stimulus or misattributed it to the second. In the latter case, excitation transfer would occur.

The research of Lazarus (6, 7) and his colleagues represents another significant use of film mediated emotional arousal to test a theory of emotion. According to Lazarus, an emotional state occurs as a result of cognitive appraisal of threat in the environment. Lazarus operationalized threat with stressful films, and manipulated *Ss*' appraisal with instructions played before or with soundtracks played during the films. The effects of these manipulations were assessed with physiological measures of arousal. Lazarus and his co-workers found that arousal was reduced when *Ss* were instructed to deny, intellectualize, or be detached from the contents of the film. They posited that these instructions reduced threat appraisal (e.g., 8, 19). Nomikos, Opton, Averill, and Lazarus (15) and Speisman *et al.* (19) had also found increased arousal reactions with a prior warning or a soundtrack emphasizing the harm done to a character in the film. This effect was presumed to be due to increased appraisal of threat.

The purpose of the present research is to study a factor which might enhance the emotional impact of narrative material. A tool which a novelist or scriptwriter might employ is to disclose suggestive but incomplete information about upcoming events. [Perry (16) indicates that Alfred

Hitchcock uses this technique in high impact works.] Such a technique may be related to the cognitive preparations used by Lazarus and has been suggested as a factor by Leventhal (9), but has not been empirically tested with narrative material. Leventhal claimed that prior information causing uncertainty about coming events should increase emotional reactions to the events. Both Lazarus' and Leventhal's theories provide the assumption that certain types of preparations may increase emotional reactions and other types may decrease them.

The present study examined a cognitive variable manipulated before the presentation of an emotionally arousing narrative. However, unlike previous research, Ss were not given instructions about how to receive the material. Rather, they were merely provided with accurate information about the brief prose material they were about to read. Preinformation was explored at three levels; either no information, brief information, or more extensive information was provided.

Noninstructional preinformation has not been investigated, and the emotional impact of short prose material has been subject to less study than film segments. While all of the preceding theoretical accounts of emotional reactions involve processes which may explain preinformation effects in narrative, none were developed specifically to deal with them. The present study was not designed to provide a critical test of any particular model. Rather, it attempted to simulate a factor found in narrative which various theories indicated might be important. On the basis of our intuitions that suggestions or hints may often increase involvement, and on some pilot work, we expected that preinformation might have a curvilinear effect on reactions to emotionally arousing passages, with brief preinformation producing stronger effects than no or more extensive preinformation.

B. METHOD

1. *Subjects*

Forty-eight male and 48 female college students participated in partial fulfillment of a requirement for their introductory psychology course. Eight males and eight females were randomly assigned to every experimental cell.

2. *Design*

All Ss read four passages and following each passage completed a 13-item rating scale. An emotionally neutral preliminary passage was presented to familiarize the reader with the procedures and rating scales.

Afterwards, the three treatment passages—erotic, emotionally neutral, and violent—were presented in a partially counterbalanced order. Half of the *Ss* read the passages in the erotic first order (erotic, neutral, violent), and the other half read the passages in the violent first order (violent, neutral, erotic). The neutral passage was introduced in part to minimize the likelihood of excitation transfer (23) across the arousing passages. Since the prior passages might generate expectations or other residual effects in subsequent readings, order effects cannot be ruled out, but can be evaluated through the partially counterbalanced design.

Equal numbers of males and females were assigned to each condition. Since sex differences in erotic and aggressive domain are not uncommon (e.g., 9, 11), this factor was introduced for control and assessment. Each *S* served in one preinformation condition. No information, a one-sentence summary, or a more extensive three- to four-sentence summary preceded every passage.

Though the three-treatment passages can be considered a within-*Ss* factor, each passage was analyzed separately. This decision was based upon the fact that the various dependent measures were not found consistently valid across the different passages. Specifically, "basement effects" appeared for certain items on certain passages. Combining passages would have produced complex and frequently uninterpretable interaction effects. For this reason, each passage was analyzed in a separate design with preinformation, order, and sex as factors.

3. Materials

a. Passages. Four passages were chosen from literary sources and edited by the *E*. The first neutral practice passage was taken from *Lady Chatterly's Lover* (5) and described a man's philosophical reflections about the industrial revolution. A second neutral passage was taken from Peter Benchley's *Jaws* (1) and described a woman leisurely shopping in a small town. The arousing positive passage was adapted from Henry Miller's *Sexus* (14) and described a sexual encounter between a man and a woman alone in a house. The arousing negative passage was taken from *The Lynchers* by John Wideman (22) and described a man being burned at the stake by a mob.

The two arousing passages were selected and edited so that the structures were similar; i.e., the first line revealed the setting of the passage, the next eight to 10 lines led to the climax and final resolution of action. All four passages were modified to equate lengths and to remove any obvious

cues to their source. Each passage, between 175- and 210-words long, was presented on a single typewritten page.

b. Information cues. Ss received either no-information cues, brief information cues, or extensive-information cues before getting a passage to read. In the no-information condition, they were merely given the passages. Ss in the brief-information condition read a one-sentence description of each passage prior to receiving the passage. For example, the brief cue for the erotic passage was "the following passage will be about a sexual encounter between a male and a female," and for the violent passage, the brief cue read "the following passage will be about a man being burned at the stake by a mob." For the neutral passages, the cues were equally simple and descriptive.

In the extensive-cue condition, a longer cue given before each passage provided more detailed information and revealed the climax of the passage. It contained the brief cue first and then provided several more lines of information. The extensive cue preceding the erotic passage read "the following passage will be about a sexual encounter between a male and a female. Alone in a house, they make a game of weighing each other. They then weigh each other with their clothes off. After more play, the couple in the end make love." The negative cue read "the following passage will be about a man being burned at the stake by a mob. He is chained to a stake and gradually burned alive. The man continues to be conscious during the burning. In the end, gasoline is poured over him and he is burned to ashes."

c. Rating scales. Attached on a separate page to every passage were the same 13 rating scales. These dependent measures were 11-point bipolar scales, with the even-numbered points verbally labeled. The scales assessed in the following order: how involving, interesting, exciting, fearful, erotic, and disgusting the Ss found the passage, how much they were affected or moved by the passage, how pleasant and how enjoyable they found it, to what extent they could imagine being a character in the passage.

4. Procedure

Ss were randomly assigned to conditions and tested individually. Upon entering the laboratory, each S was told that the study would examine his or her reactions to various types of literary passages, and that he or she would have to read and rate brief passages. Two specific instructions were carefully explained to all Ss; they would rate subjectively as a reader, not as a critic and they should read at a moderate pace as they might if reading for pleasure. They were told not to skim or reread the passage.

After being given these instructions, Ss were seated at a desk in a separate room where they remained throughout the experiment. They were presented with the passages one at a time, being instructed to read each of them once and then immediately turn the page to fill out the attached scales. Ss were given five minutes to read and rate each passage.

Appropriate cues were distributed prior to passage presentation. Upon receiving the cue for the first practice passage, the Ss were told "there are a variety of passages and you will receive a brief description of each prior to its presentation." The *E* handed the *S* the cue, left the room, and waited 30 seconds before returning. He then collected the cue, and handed the *S* the passage. In the no-cue condition, the *E* waited 30 seconds between distributing passages in order to make the time intervals between passages equivalent across information conditions.

C. RESULTS

1. Preliminary Analysis

a. Clustering of dependent measures. To strengthen and simplify the analysis and presentation of results, the 13 rating scales were combined on a conceptual basis into five dependent variables. This clustering followed the suggestion by Zillmann (e.g., 23) that emotional stimuli can be classified by arousal and tone components, with arousal posited to be the general emotional reaction produced by the stimuli and tone to be the stimuli's positiveness or negativeness. An arousal variable was constructed by summing the involvement, interest, excitement, arousal, attention, and affected or moved scales. A second variable, negative hedonic tone, combined pleasantness and enjoyment. Character identification and imagining the setting were analyzed separately as the fourth and fifth dependent variables. The eroticism scale was dropped from the analysis, since several Ss reported being uncertain about the meaning of the word during debriefing.

While these new variables were formed on the basis of the nominal content of the individual items, average within-cells correlations indicated that they were reasonable empirical groupings. The arousal dimension was constructed from items with an average intercorrelation of $+.51$ after the violent passage (ranging from $+.29$ to $+.68$), of $+.52$ after the erotic passage (ranging from $+.26$ to $+.75$), and $+.48$ after the neutral passage (ranging from $+.28$ to $+.69$). The two items forming the positive hedonic tone variable had high correlations following the violent passage ($+.72$)

and the erotic passage (+.87) and a moderate correlation following the neutral passage (+.47). The negative tone items had the weakest relationship being moderately correlated after the violent (+.42) and erotic (+.58) passages and uncorrelated (+.01) on the neutral passage. The last score however, chiefly reflects the low variation on ratings of fear and disgust for the neutral passage, a description of a woman's shopping trip.

3. Classification of passages. The passages had been selected and edited to produce different types of emotional reactions, i.e., to be negatively arousing, positively arousing, and emotionally neutral. This typology can be evaluated by looking at overall passage differences. Reactions to the neutral passage were mild compared to the violent and erotic passages, and a contrast analysis (13) indicated, in fact, that the arousal dimension showed highly significant differences between the neutral and two arousing passages [$F(2, 84) = 234.33, p < .01$]. To assess the positive and negative qualities of the violent and erotic passages, the hedonic tone variables were used. Consistent differences between passages appeared. The erotic passage received much higher ratings on positive hedonic tone than the violent passage [$F(1, 84) = 156.88, p < .01$], while the violent passage was significantly higher on negative hedonic tone than the erotic passage [$F(1, 84) = 428.06, p < .01$]. It appears that the three passages did successfully represent the intended differences.

2. *Effects of Preinformation on the Arousing Passages*

Five separate variable multivariate analyses were performed on each of the passages in order to protect error rates of univariate tests on individual items. On the negative passage, there was a significant multivariate main effect for preinformation [$F(10, 160) = 2.00, p < .04$] and significant univariate effects on arousal ($p < .01$) and imagining the setting ($p < .01$). These effects were clear main effects with no interactions occurring on either variable.

The brief-cue condition had the strongest impact on each of the two significant measures. In fact, for each of the six items composing the arousal dimension, the brief cue produced the highest ratings. Newman-Keuls tests were computed for both arousal and imagining-the-setting variables. On arousal, the brief-cue condition had significantly stronger ratings than both the extensive-cue condition ($p < .05$) and the no-cue condition ($p < .01$). On the imagining-the-setting scale, the extensive-cue was significantly higher than the no-cue condition ($p < .05$).

The multivariate effect for preinformation was also significant for the

erotic passage [$F(10, 160) = 2.24, p < .02$]. There was a significant univariate effect with positive tone ($p < .03$), imagining the setting ($p < .03$), and negative tone ($p < .04$). These effects were again clear main effects with no interactions.

The means for the erotic passage reveal that the brief cue condition showed the strongest effect on positive tone and imagining the setting, a pattern similar to the significant findings on the violent passage. The negative tone variable showed just the opposite pattern; that is, the brief cue produced the weakest effects. However, the pattern could be expected, since to some extent, positive tone is an antonym for negative tone. Furthermore, the negative tone dimension had serious "basement effect" problems in that out of a possible 20 points, the responses averaged less than 1. For this reason, we are reluctant to interpret negative tone with the erotic passage. Newman-Keuls analyses showed significant extensive- vs. brief-cue differences on positive tone ($p < .05$), significant no- vs. brief-cue differences on imagining the setting ($p < .05$), and no differences on negative tone.

3. *Sex Effects on the Violent and Erotic Passages*

The Sex \times Order interaction had a significant multivariate effect on the violent passage [$F(5, 80) = 2.95, p < .02$]. Both the character identification scale ($p < .05$) and the imagining the setting scale ($p < .01$) showed significant effects. Males responded more strongly on both scales when the violent passage came before the erotic, and females responded more strongly on each when the violent passage came last.

The multivariate analyses indicated that there were marginally significant main effects of sex for both the erotic passage [$F(1, 84) = 1.87, p < .11$] and the violent passage [$F(1, 84) = 2.29, p < .06$]. Some univariate effects were significant with males rating the erotic passage more positive in tone than females [$F(1, 84) = 4.74, p < .04$] and identifying more with the characters in that passage [$F(1, 84) = 7.71, p < .01$]. Males also rated the violent passage more positive in tone than females [$F(1, 84) = 5.98, p < .02$].

4. *The Neutral Passage*

No clear pattern of effects appeared on the neutral passage. While the preinformation main effect showed multivariate significance, closer inspection indicated that negative tone was the only significant univariate dimension, and the extreme basement effects of this scale (a predominance of "0"

response and an overall mean of .18 on the 20-point scale) seemed to rule out the utility of this scale with the neutral passage. Furthermore, when the negative tone dimension was removed from the multivariate analysis, the effect of preinformation on the remaining four variables did not approach significance. In sum, it appeared that the independent variables had little reliable effect on the nonarousing passage. The consistent main effect of preinformation found with the violent and erotic passages were not present here, nor were sex effects.

D. DISCUSSION

Preinformation produced significant multivariate and univariate main effects unencumbered by interactions on the violent and erotic passages. On those dimensions where preinformation had significant univariate effects, the brief-information cue produced the highest ratings. On some dimensions, the effects of the brief cue were significantly stronger than no cue, on others significantly stronger than the extensive cue, and on the arousal dimension following the violent passage, significantly stronger than both cues. Precise analysis of differential effects of preinformation requires further investigation, but the best overview is that the brief cue increased the impact of the arousing passages.

Though males and females were similarly affected by preinformation, there were a few sex effects on the arousing passages. The Sex \times Order interaction on the violent passage was unexpected and is difficult to interpret, especially since order alone failed to produce significant main effects on any dimension. Main effects of sex were only marginally significant in the multivariate analysis, and the different reactions of males and females to the passage revealed by the univariate analysis, if reliable, are peripheral to the thrust of the study.

The neutral passage was largely unaffected by the manipulations. When the negative tone dimension was removed because of clear basement effects, preinformation failed to show any significant univariate or multivariate main effects. At present, it appears that the effects of preinformation are limited to arousing passages.

Various processes might account for this preinformation phenomenon. Simple expectancies or demand characteristics can be ruled out as an explanation because the more extensive preinformation cue did not produce greater or even equally as strong effects. Furthermore, the preinformation factor did not produce similar main effects with the neutral passage which appeared between the violent and erotic passages.

Two candidates for explaining the results might be Lazarus' (7) analysis of cognitive appraisal of threat and Zillmann's (23) excitation transfer theory. Studies which have tested both theories have used arousing films and have presented either prior instructions (8) or prior arousing material (23). However, each theory appears to fall short of providing a full satisfactory account.

The cognitive appraisal approach, for example, might imply that the extensive cue provides Ss with enough information to build coping mechanisms for the coming passage, whereas the brief cue signals threat but provides insufficient information for coping. However, such an application of cognitive appraisal concepts has a rather descriptive, *post hoc* flavor, when no explicit preparatory instructions are contained in the information cues. Furthermore, preinformation effects on the erotic passage are more difficult to account for with a threat appraisal theory.

Arousing films of both positive and negative hedonic tone have been employed in research on excitation transfer theory. This theory emphasizes the role of immediately prior arousing experiences and attributions that an individual makes about the source of the current arousal. Application of the transfer concept here requires the assumption that the extensive cue was either less arousing than the brief cue, or that the extensive cue produced different attributions about arousal source. Neither assumption seems to have particular support in the present study.

Leventhal's (9) view that uncertainty leads to stronger emotional reactions may account for differences between the brief and extensive cues. However, the uncertainty principle becomes difficult to apply with the no-cue effect. Did Ss experience more uncertainty in the no-cue condition because they had no idea about what sort of passage was coming, or less uncertainty because they could not anticipate the coming passage?

In research dealing with attitude change rather than emotional arousal, Tesser and his colleagues have identified processes which may be analogous to preinformation effects. Thinking about positive or negative attitude objects leads to more polarized feelings (20, 21). This effect seems to be self-generated cognitions which Ss add to presented material. The brief cue may have spurred independent thoughts and anticipations which combined with the effects of the arousing passages to produce more impact. The added details of the extensive cue may have evoked thoughts and images similar to those produced by the passage itself, consequently, not augmenting the impact of the passages. Tesser and Cowan (21) report that more extensive information about an attitude object leads to fewer self-generated thoughts and less attitude polarization.

A satisfactory account of the findings at this stage of research seems to point to both Tesser's notion of self-generated thought and Leventhal's notion of uncertainty: the impact of an emotionally arousing narrative may be enhanced by inducing readers to anticipate impending events. However, the prior description of the events must leave the readers somewhat uncertain about what is coming. Variations of the preinformation manipulation may further contribute to a synthesis of theories about the role of excitation transfer, uncertainty, threat appraisal, and cognitive activities in narrative works. For example, excitation transfer may be tested by comparing the effects of arousing cues to less graphic ones. The role of threat appraisal may be assessed by comparing cues which divulge the threatening nature of a coming passage to those that do not.

Preinformation of some form is ecologically common in narrative and we suspect also that advertisements and conversational anecdotes may often present prior material in a similar fashion. The current study provides an initial basis for suggesting that research that examines preinformation or other factors found in narrative can promote a better understanding of processes involved in the vicarious emotional reaction to prose material.

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CROSS-CULTURAL NOTES

Under this heading appear summaries of studies which, in 500 words or less, provide comparable data from two or more societies through the use of a standard measuring instrument; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

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DIFFERENCES IN SELF-DISCLOSURE AMONG TRIBAL AND NONTRIBAL BOYS IN INDIA*

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Studies on self-disclosure have been the focus of attention in contemporary research. Self is an important personality characteristic and self-disclosure has been defined² as "an act of revealing personal information about the self to others." Few studies conducted in the West have found cross-cultural differences in self-disclosure. The importance of self-disclosure was first discussed by Lewin³ when he described his impressions of important personality differences between German and American national character-type. Studies in the West have sought to correlate self-disclosure with a number of personality and social variables.⁴ Few of them have stressed the importance of willingness to disclose to others one's feelings, wishes, ideas, and attitudes as one of the major criteria of healthy personality or as one of the major aspects of basic personality. No reported research has studied self-disclosure in two cultures in India (one tribal and the other nontribal). It is of more than comparative interest to explore the

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¹ An extended report of this study may be obtained from the first author at the address shown at the end of this article.

² Jourard, S. M. Some factors in self-disclosure. *J. Abn. & Soc. Psychol.*, 1958, 56, 91-98.

³ Lewin, L. Some socio-psychological differences in the United States and Germany. *Charac. & Personal.*, 1935, 4, 265-293.

⁴ Plog, S. C. The disclosure of self in United States and Germany. *J. Soc. Psychol.*, 1965, 65, 193-203.

association between self-disclosure and cultural practices in a developing country like India where social-class differences in child-rearing attitudes and practices are less marked and where large families are still prevalent. The present study investigates cross-cultural differences in self-disclosure among tribal and nontribal adolescent boys.

Sinha's self-disclosure inventory was administered to 50 tribal (Tharu) and 50 nontribal Indian boys 12-14 years of age. Ss were randomly sampled and were matched for age, education, socioeconomic status, birth order, and geographical region. The tribal Ss were drawn from the Tharu tribe of Lakhimpur-Kheri district in the State of Uttar Pradesh. The nontribal Ss were drawn from the geographical region closest to that from which the tribals were taken. All the nontribal Ss were Hindus. (Nontribal is a member of any group other than tribal.)

Simple addition of the self-disclosure in different areas gives the total amount of self-disclosure. The mean scores of the tribal and nontribal Ss are 508 and 442, respectively. Results show that the tribal Ss scored significantly higher than their nontribal counterparts ($t = 6.37$, $df = 98$, $p < .01$). The higher score of the tribal boys indicates that they disclosed more than their nontribal counterparts. This higher disclosure may be due to the fact that Tharu tribals are very simple, peace-loving, satisfied, adjusted, relaxed, conservative, traditional, and rigid.⁵ Cultural practices and social set-up in the Tharu tribe, therefore, have an effect on the degree of self-disclosure. Results further suggest that tribal and nontribal adolescents are not equally expressive and communicative and their cultural backgrounds appear to influence their self-disclosure.

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⁵ Srivastava, R. K., Saxena, V., & Kapoor, K. D. Cross-cultural differences in rigidity. *Psycho Lingua*, 1977, 7(1-2), 11-16.

GERMAN AND AMERICAN RESPONSES TO THE BEM SEX ROLE INVENTORY*

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The Bem Sex Role Inventory (BSRI)¹ is increasingly used as a measure of the individual's culturally defined sense of gender orientation. However, data from this instrument have been almost exclusively limited to American samples, with the focus being on the factor-analytic properties of the measure and the calculation of androgyny scores. Extending this literature are the present BSRI item-analysis findings for male and female samples of German ($N = 168$) and American ($N = 234$) university students and American high school ($N = 187$) students.² The BSRI contains 20 traits considered stereotypically descriptive of males and 20 traits considered more descriptive of females. Ss are to indicate whether each trait is "never or almost never true" of them (scored 1) and so on through the response of "always or almost always true" (scored 7).

The "male" vs. "female" BSRI mean scores for the German males (GMs) and females (GFs), American university males (AUMs) and females (AUFs), and American high school males (AHSMs) and females (AHSFs) were, respectively, 4.38 vs. 4.29 and 3.74 vs. 4.43, 5.14 vs. 4.61 and 4.59 vs. 5.20 and 4.72 vs. 4.71 and 4.49 vs. 4.86. Both within and across cultural samples, females tended to be less positive than males in their self-perceptions and to draw a finer line of descriptive distinction between their masculine and feminine attributes.

Spearman-rho correlations indicate greater within-sex and within-culture agreement on the self-attribution of BSRI traits. Moreover, with respect to both the Ss' sex and cultural context, there was greater descriptive agreement for the "female" than "male" items. For the latter, the Spearman-rho value comparing the rankings of GMs and GFs was .72, .58 for GMs and AUMs, .57 for GMs and AUFs, .19 for GMs and AHSMs, and .36 for GMs and AHSFs. GF and AUM rankings correlated to the degree of .24.

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¹ Bem, S. The measurement of psychological androgyny. *J. Consult. & Clin. Psychol.* 1974, 42, 155-162.

² Details available free of charge from the author.

.75 for GFs and AUFs, .05 for GFs and AHSMs, and .60 for GFs and AHSEs. AUMs and AUFs agreed in their rankings to the extent of .75 for AUMs and AHSMs, and .59 for AUMs and AHSEs. The ranking coefficient linking AUFs and AHSMs was .43 and for AUFs compared with AHSEs it was .89. Ranking agreement between AHSMs and AHSEs was indicated by the Spearman-rho value of .63.

Greater agreement for the BSRI "female" than "male" items is indicated by the following rho coefficients: .89 between GMs and GFs, .80 between GMs and AUMs, .61 between GMs and AUFs, .79 between GMs and AHSMs, and .75 between GMs and AHSEs; .71 between GFs and AUMs, .71 between GFs and AUFs, .78 between GFs and AHSMs, and .80 between GFs and AHSEs; .81 between AUMs and AUFs, .94 between AUMs and AHSMs, and .86 between AUMs and AHSEs; and .86 between AHSMs and AHSEs. This cross-cultural analysis of the BSRI item by item provides, therefore, new evidence of the methodological value of the measure in the continued study of sex roles.

REPLICATIONS AND REFINEMENTS

The following heading appears summaries of studies which are summaries of research data substantiating, not substantiating, or relating and extending to known, additional details concerning the results of the study. Communicating directly with the investigator or, when indicated by the editor, supplementary material from *Microfilm Publications*.

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THE INTERNAL CONSISTENCY OF WILSON'S CONSERVATISM SCALE*

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Research¹ relating to the Wilson-Patterson Conservatism (C) scale has been luminous. The constructors of the scale claim its format to be more valid and reliable than a scale of conventional form for, in the C-scale, items are reduced to "attitude content" alone, thus it is hoped that contextual contamination is reduced to a minimum. With regard to the scale's validity it has been demonstrated² that the C-scale discriminates significantly between a group of Salvation Army Officers and Young Humanists. In addition, split-half coefficients of .84 to .94 have been reported, indicating high reliability. Moreover, correlations in the vicinity of .7 between the liberal and conservative halves (subs) of the scale have also been noted³ suggesting that the scale is internally consistent.

Ray,⁴ however, has reviewed several findings critical of the C-scale's adequacy. He summarizes findings from two of his own studies which show the C-scale to have much lower reliability than that originally reported, that some items correlate negatively with the scale total, as well as

* Received in the Editorial Office, Provincetown, Massachusetts, on July 18, 1978. Copyright, 1979, by The Journal Press.

¹ Wilson, G. D., Ed. *The Psychology of Conservatism*. London: Academic Press, 1973.

² Wilson, G. D., & Lillie, F. J. Social attitudes of humanists and salvationists. *Brit. J. Soc. & Clin. Psychol.*, 1972, 11, 220-224.

³ Wilson, G. D. Evaluation of the Conservatism scale: A reply to Ray. *New Zealand Psychol.*, 1974, 3, 27.

⁴ Ray, J. J. How good is the Wilson-Patterson Conservatism scale? *New Zealand Psychol.*, 1974, 3, 21-26.

a positive rather than negative r_{PN} . The present study reports on further research into C-scale statistics.

The revised C-scale⁵ was administered to 99 English-speaking senior male students (mean age 16.74 years, $SD = .78$) and the children's scale⁶ to 60 English-speaking boys and girls (mean age 13.07 yr., $SD = .40$). The senior group obtained a mean C-scale score of 50.24 ($SD = 11.37$), registered a split-half reliability of .76 and a r_{PN} of $-.40$ ($p < .001$). The group of children obtained a mean score of 53.35 ($SD = 9.75$), a split-half reliability of .73, and a r_{PN} of $-.26$ ($p < .05$). Although the reliability for both groups was lower than that reported in the original research, it remains acceptable. This, together with the fact that the r_{PN} for each group is negative and significant, supports Wilson's claim that the C-scale is reliable and internally consistent.

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⁵ Wilson, G. D. Manual for the Wilson-Patterson Attitude Inventory. (WPAI). Windsor, U.K.: NFER Publishing Co., 1975.

⁶ Insel, P., & Wilson, G. D. Measuring social attitudes in children. *Brit. J. Soc. & Clin. Psychol.*, 1971, 10, 84-86.

EXPERIMENTALLY INDUCED AGGRESSION LEVELS OF IDENTICAL- AND CROSS-SEX DYADS*

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In a recent study Kool¹ reported that females in India aggress less intensely to a female victim as compared to a male victim, under instigating conditions in which negative information is given against a victim. This finding contradicted Kakar's analysis² based on Indian folk tales that aggression in the same-sex dyads was significantly higher than in cross-sex dyads. Moreover, Kool's finding also reflected cross-cultural differences in contrast with findings by Buss for an American sample that female aggression is identical for male or female victims.³

It was hypothesized in the present study that positive information about a victim (i.e., his or her good character, seriousness in studies, politeness, etc.) would act as an inhibiting factor in the aggressiveness of a person, and the effect of such positive information would lead to greater decrease in a female aggressor-female victim dyad if the implications of Kool's study based upon negative information are valid.

As in the previous study by the author, a typical Buss type of method was followed with aggressor giving shocks to a victim while he made programmed errors during learning some material. However, instead of giving negative information against a victim (e.g., his bad character, etc.) in this study *S* was given positive information about a victim. Again, after the sixth trial, additional positive information was given. As in the previous study, nine trials were given to each *S* to make the victim learn the given material. Eighty students, 40 males and 40 females, were equally divided into the following four groups in this study: (a) Male aggressor *vs.* Male victim (M-M), (b) Male aggressor *vs.* Female victim (M-F), (c) Female

* Received in the Editorial Office, Provincetown, Massachusetts, on July 24, 1978. Copyright, 1979, by The Journal Press.

¹ Kool, V. K. Experimentally induced aggression as a function of instigating information, manifest hostility, and sex. *J. Soc. Psychol.*, 1978, **104**, 305-306.

² Kakar, S. Aggression in Indian society: An analysis of folk tales. *J. Soc. Psychol.*, 1975, **97**, 293-294.

³ Buss, A. H. *The Psychology of Aggression*. New York: Wiley, 1961.

aggressor *vs.* Male victim (F-M), and (d) Female aggressor *vs.* Female victim (F-F).

The mean aggression scores of Ss in the four groups are as follows under three phases of positive information: 3.53, 3.96, and 3.86 for M-M group; 3.83, 3.92, and 4.15 for M-F group; 3.08, 3.26, and 3.07 for F-M group; and 3.42, 3.06, and 2.47 for F-F group. Despite the expected inhibition in aggression levels as a result of providing positive information, no significant differences were obtained on an analysis of variance test applied separately for each group except for F-F ($F = 11.82$, $df = 2, 59$, $p < .001$).

Since the aggression scores were found to increase in all the groups having males as either aggressors or victims, presumably due to typical methodology of a Buss type experiment, a tendency among males to show higher aggression, or a feeling among females that males can withstand greater amount of physical punishment, it was decided to compare two identical-sex dyads (M-M *vs.* F-F) on a two-way analysis of variance test with repeated measures on one variable: i.e., positive information conditions. The results did not yield any significant difference except for M-M/F-F \times positive information ($F = 4.69$, $df = 2, 76$, $p < .05$). This indicates that with increase in input of positive information after the third and the sixth trials, the aggression levels of M-M and F-F dyads did not remain identical.

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THE VALIDITY OF THE MORAL AND EXPEDIENT ROLE ORIENTATION TEST*

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In their well-known theory of role conflict resolution Gross *et al.*¹ assume that there are two mutually exclusive personality orientations concerning legitimacy and sanctions. A person with a *moral orientation* lets his legitimacy judgments predominate over the sanctions he expects when determining his role behavior, while one with an *expedient orientation* is primarily concerned with his expected sanctions.

The test developed to measure these orientations in a sample of 105 school superintendents, the Moral-Expedient Role Orientation (MERO) test, consists of a listing of 37 activities for which everyone indicates whether he feels obligated to do it: absolutely must, preferably should, may or may not, preferably should not, absolutely must not. The test score is composed of an individual's number of must and must not responses. Higher scores are assumed to indicate a more moral and less expedient role orientation than lower scores. However, this test has never been validated, even though it has been used in seven additional studies.

Because Van de Vliert² doubts the validity of the MERO test, we have carried out a validation study. In an anonymous mail questionnaire, Gross *et al.*'s original MERO instrument was presented to 228 Ohio school superintendents. [A random sample of 200 (response 48%) and a group of 28 known to us (response 93%); homogeneity: Cronbach's $\alpha = .82$, $N = 121$. The latter group was retested after three months to determine the stability of the scores (response 77% of the 93%; stability, $r = .68$, $N = 20$).]

The first validation criterion³ was an internal-external (I-E) control scale ($\alpha = .75$). We reasoned that both, MERO and I-E construct, are concerned with the extent to which a person focuses on the self rather than the

* Received in the Editorial Office, Provincetown, Massachusetts, on July 24, 1978. Copyright, 1979, by The Journal Press.

¹ Gross, N., Mason, W. S., & McEachern, A. W. *Explorations in Role Analysis*. New York: Wiley, 1958.

² Van de Vliert, E. Gross, Mason and McEachern have not really verified their theory of role conflict resolution. *J. for Theory Soc. Behav.*, 1975, 5, 225-234.

³ Mirels, H. L. Dimensions of internal versus external control. *J. Consult. & Clin. Psychol.*, 1970, 34, 226-228.

environment as a point of reference. The second criterion⁴ comprised 13 statements which were to be answered true or false according to whether the *S* felt they were applicable to him. Of these, five were intended to measure legitimacy orientation ($\alpha = .51$; stability, $r = .48$) and eight sanctions orientation ($\alpha = .61$; stability, $r = .83$). It was shown that MERO is not significantly related to I-E ($r = .09$), legitimacy orientation ($r = .13$), or sanctions orientation ($r = .04$): three indications that the test has no validity.

The alternative assumption that the MERO test measures dogmatism has been tested,⁵ coding a bipolar seven-point dogmatism scale 3-3-3-2-1-1-1 ($\alpha = .63$). The same scale resulted in an extreme response score, coding it 3-2-1-0-1-2-3 ($\alpha = .71$). When x stands for MERO, y for dogmatism, and z for extreme response style, $r_{yz} = -.54$ ($p < .001$); $r_{xy} = .15$ and $r_{xyz} = .08$ (n.s.); $r_{xz} = .39$ and $r_{xyz} = .37$ ($p < .001$). The assumption that the MERO test measures dogmatism has to be rejected. More likely, it reflects extreme scoring bias.

In order to determine if there was a nonresponse problem, the small group with 93% response was compared to the total group with 53% response. But with this high response group the MERO test has analogous relations with the I-E-scale ($r = .13$), legitimacy orientation ($r = .14$), sanctions orientation ($r = .13$), dogmatism ($r = .07$), and extreme scoring ($r = .41$, $p < .05$). These findings suggest that there is no nonresponse problem. The MERO test, which probably reflects extreme scoring bias, is apparently not valid.

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⁴ Van de Vliert, E., & Cottrell, D. A. Scales for Legitimacy Orientation and Sanctions Orientation. Amsterdam: Internal Publication Vakgroep Sociale Psychologie, Vrije Universiteit, 1976.

⁵ Troidahl, V. C., & Powell, F. A. A short-form dogmatism scale for use in field studies. *Soc. Forces*, 1965, 44, 211-214.

THE RELATIONSHIP BETWEEN ACHIEVEMENT ORIENTATION AND LOCUS OF CONTROL*

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SS who score at the internal end of locus of control scales are believed to have a sense of power to control events that will affect them; thus, a relationship between internal scores and achievement orientation has been predicted. In some studies that tested this hypothesis, internal scores and classroom achievement have been found to be positively related among college males, but not among college females.^{1,2,3}

This sex difference may be explained, in part, by the measures of locus of control and achievement orientation that have been employed in these studies. The adult locus of control scales cover a variety of locus of control issues, yet measures of achievement orientation have generally been limited to classroom achievement. Although classroom achievement may be an appropriate measure of general achievement orientation in males, it may not be adequate to tap general achievement orientation in females: most males who achieve in undergraduate coursework probably do so as a part of a more general orientation toward long-range (career) achievement, but some females probably achieve in their coursework in the absence of such an orientation. Thus, the difference in findings for males and females may reflect a difference in the adequacy of classroom achievement as a measure of general achievement orientation in males and females. To explore more fully the relationship between general locus of control and achievement orientation in both sexes, nonclassroom measures of achievement orientation should also be considered.

The present study tested the relationship between a general locus of control measure, the Rotter Locus of Control (I-E) Scale, and a nonclassroom measure of achievement orientation, plans for graduate school. The

* Received in the Editorial Office, Provincetown, Massachusetts, on August 4, 1978. Copyright, 1979, by The Journal Press.

¹ Boor, M. Dimensions of internal-external control and academic achievement. *J. Soc. Psychol.*, 1973, 90, 163-164.

² Brown, J. C., & Strickland, B. R. Belief in internal-external control of reinforcement and participation in college activities. *J. Consult. & Clin. Psychol.*, 1972, 38, 148.

³ Duke, M. P., & Nowicki, S. Locus of control and achievement—The confirmation of a theoretical expectation. *J. of Psychol.*, 1974, 87, 263-267.

traditional achievement measure, grade point average (G.P.A.), was also considered. It was hypothesized that graduate school plans would be related to Rotter scores for both male and female college students, but that G.P.A. would relate to internal scores among males only.

Ss were 119 female and 117 male undergraduates from a Midwestern university who completed the Rotter I-E Scale and questions regarding graduate school plans and grades in a group setting. The relationship of graduate school plans and sex to I-E scores was tested in a 3×2 analysis of variance. Students planning for graduate school had lower (more internal) scores ($\bar{X} = 9.50$) than those who were not planning to attend ($\bar{X} = 10.80$) or those who had not made a decision ($\bar{X} = 11.44$), $F(2,230) = 4.86$, $p < .01$. Sex and the interaction of sex and plans was not significant; for both males and females plans were related to lower scores.

As in earlier studies, high G.P.A. males averaged lower scores ($\bar{X} = 9.25$) than low G.P.A. males ($\bar{X} = 10.35$), and high G.P.A. females ($\bar{X} = 11.07$) did not average lower scores than low G.P.A. females ($\bar{X} = 10.61$). However, correlations between G.P.A. and I-E scores were nonsignificant for both sexes.

These results support the hypothesis that measures of achievement orientation other than course grades are related to locus of control in both sexes, and that nonclassroom measures of achievement orientation should be included in studies of the relationship between locus of control and achievement orientation.

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BIRTH ORDER AND LEADERSHIP STYLE*

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Chemers¹ reviewed the literature on birth order and affiliative behavior and found that the corpus of research does not support the hypothesis that relates birth order with affiliative behavior.² He tested the hypothesis that "first borns will tend to be more task-oriented leaders, while later borns will be more relationship- and socially-oriented leaders," and found a modest relationship ($p < .025$). He dichotomized the "esteem for the least preferred co-worker (LPC) score" and classified his Ss as either firstborn or other. The finding was viewed as "yet another facet of the pervasive nature of birth order effects."

The results reported here are based on a similar dichotomization of 180 graduating nurses in six nursing programs³ who completed the Leadership Opinion Questionnaire (LOQ).⁴ Ss ranged in age from 20 to 55. Most had had some significant job experience and faced a demanding career in highly structured settings.

The LOQ consists of two scales: Consideration (C), a scale which purports to measure the extent to which the S has job relationships with subordinates which are based on mutual trust and consideration of personal feelings; and Structure (S), which indicates the extent to which the S defines his or her role toward subordinates in terms of goal attainment. High C scores indicate good rapport and two-way communication, high S scores indicate a propensity to plan, to schedule, to criticize, and to direct.

Ss were dichotomized into firstborn and latter born, creating groups of 80 and 100. A *t* test was done with C and S scores used as dependent

* Received in the Editorial Office, Provincetown, Massachusetts, on August 17, 1978.
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¹ Chemers, M. M. The relationship between birth order and leadership style. *J. Soc. Psychol.*, 1970, 80, 243-244.

² Warren, J. R. Birth order and social behavior. *Psychol. Bull.*, 1966, 65, 38-49. Bradley, R. W. Birth order and school related behavior: A heuristic review. *Psychol. Bull.*, 1968, 70, 45-51.

³ Meleis, A. I. Operation concern: A study of senior nursing students in three nursing programs. *Nursing Res.*, 1974, 23, 461-468. Dagenais, F. Leadership styles of allied health administrators. *J. Allied Health*, 1977, 6, 31-37.

⁴ Fleishman, E. A. Manual for Leadership Opinion Questionnaire (1969 ed.). Chicago: Science Research Associates, 1969.

variables with the result that there were no differences between the two groups on either test ($t_C = -1.16, p = .50$; $t_S = 1.19, p = .43$). For these Ss, birth order did not appear to be related to either C or S.

These findings are yet another addition to the growing number of empirical studies of birth order effects which are, at worse, inconclusive, and, at best, show a weak relationship. It is entirely possible that Chemer's "significant" finding ($p < .025$) was an artifact of sample size ($N = 350$), or of the social desirability of LPC responses.⁵

The LOQ and LPC instruments appear to have something in common and to have a theoretical relationship to affiliative behavior. However, the LOQ measures two dimensions of what is indeed a complex set of constructs and its use in this replication is believed to be a better test of Chemer's hypothesis.

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⁵ Dagenais, F. Response bias and the Leadership Opinion Questionnaire scales. *J. Gen. Psychol.*, 1979, 100, 161-162.

HELPING BEHAVIOR AS PREDICTED BY DIFFUSION OF RESPONSIBILITY, EXCHANGE THEORY, AND TRADITIONAL SEX NORM^{*1}

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The theory of diffusion of responsibility² and exchange theory³ are important predictors of helping behavior. There are ample studies to substantiate both theories.⁴ Conformity to social norms requires individuals to be more helpful to females than to males; however, recent researchers⁵ do not substantiate this idea.

The present study aims at testing three hypotheses regarding a motorist in distress along the side of the road: (a) more motorists will help on a lonely than on a busy road; (b) more motorists will help in sunny than in rainy weather; and (c) more motorists will help a female than a male victim. The procedure and what was said to the helping motorists was the same as Skolnick's.⁵ We differed from Skolnick and used the variable sunny or rainy weather instead of night or day time. A $2 \times 2 \times 2$ design was used, varying location (busy or lonely road), sex of the victim, and weather (sunny or rainy). All the observations were made by hidden observers in the month of September and October between noon to 4:00 p.m. in time blocks of 10 minutes. In rainy conditions, the C did not start waving for help until he was wet.

* Received in the Editorial Office, Provincetown, Massachusetts, on August 28, 1978. Copyright, 1979, by The Journal Press.

¹ The author thanks his students Lisa T. Humeniuk and Veronica Lee Steinburg for acting as confederates and collecting the data in odd conditions.

² Darley, J. L., & Latane, B. Bystander intervention in emergencies: Diffusion of responsibility. *J. Personal. & Soc. Psychol.*, 1968, 8, 377-388.

³ Homans, G. S. Social behavior as exchange. *Amer. J. Sociol.*, 1958, 63, 597-606.

⁴ Bickman, L. The social influence and diffusion of responsibility in an emergency. *J. Exper. Soc. Psychol.*, 1971, 7, 367-379. Latane, B., & Rodin, J. A lady in distress: Inhibiting effects of strangers and friends on bystander intervention. *J. Exper. Soc. Psychol.*, 1969, 5, 189-202. Piliavin, J. A., & Piliavin, J. M. Effects of blood on reactions to a victim. *J. Personal. & Soc. Psychol.*, 1972, 23, 353-361. Piliavin, J. A., Piliavin, J. M., & Rodin, J. Cost, diffusion and the stigmatized victim. *J. Personal. & Soc. Psychol.*, 1976, 32, 429-438.

⁵ Skolnick, P. Helping as a function of time of day, location, and sex of victim. *J. Soc. Psychol.*, 1977, 102, 61-62. Latane, B., & Dabbs, J. M., Jr. Sex, group size and helping in three cities. *Sociometry*, 1975, 36, 180-194. Gruder, C. L., & Cook, T. D. Sex, dependency and helping. *J. Personal. & Soc. Psychol.*, 1971, 19, 290-294.

More motorists helped on a lonely than on a busy road ($F = 45.145$, $df = 1/184$, $p < .001$). The mean number of cars passing before help was received was 9.30 on a lonely and 30.80 on a busy road. However, because of heavy traffic, help was received sooner on a busy than on a lonely road ($F = 62.14$, $df = 1/113$, $p < .001$). More motorists helped both male and female victims in sunny than in rainy weather ($F = 49.99$, $df = 1/184$, $p < .001$). The mean number of cars passing before the motorist stopped to help was 8.77 for the sunny and 21.89 for the rainy weather. Female victims received more help than any other group in any other condition ($F = 3.68$, $df = 1/184$, $p = .055$). A victim on a lonely road in sunny weather received more help than in any other condition ($F = 19.92$, $df = 1/184$, $p < .001$).

Our first two hypotheses have been confirmed and are in accord with the literature. That is, individuals will help more on a lonely road as predicted by the concept of diffusion of responsibility and as predicted by the exchange theory. More motorists helped in sunny than in rainy weather because people do not want to mess the interior of their cars.

However, our third hypothesis could not be confirmed. We can explain this in terms of changing norms. The women's liberation movement has changed the image of women as a weak and fragile object. Latané and Dabbs have reported accordingly. Canada proportionally has more first generation immigrants than U.S.A. It can be assumed that immigrants are less traditional.

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Abstracts	<i>Abst.</i>	Journal	<i>J.</i>
American	<i>Amer.</i>	Mathematical	<i>Math.</i>
Anatomy	<i>Anat.</i>	Measurement	<i>Meas.</i>
Animal	<i>Anim.</i>	Medical	<i>Med.</i>
Applied	<i>Appl.</i>	Mental	<i>Ment.</i>
Archives	<i>Arch.</i>	Monographs	<i>Monog.</i>
Association	<i>Assoc.</i>	Neurology	<i>Neurol.</i>
Attitude	<i>Attit.</i>	Opinion	<i>Opin.</i>
Australian	<i>Aust.</i>	Orthopsychiatry	<i>Orthopsychiat.</i>
Behavior	<i>Behav.</i>	Personality	<i>Personal.</i>
British	<i>Brit.</i>	Personnel	<i>Person.</i>
Bulletin	<i>Bull.</i>	Philosophy	<i>Philos.</i>
Bureau	<i>Bur.</i>	Physics	<i>Phys.</i>
Canadian	<i>Can.</i>	Physiology	<i>Physiol.</i>
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Children	<i>Child.</i>	Psychiatry	<i>Psychiat.</i>
Chinese	<i>Chin.</i>	Psychoanalysis	<i>Psychoanal.</i>
Clinical	<i>Clin.</i>	Psychology	<i>Psychol.</i>
College	<i>Coll.</i>	Psychosomatic	<i>Psychosomat.</i>
Comparative	<i>Comp.</i>	Quarterly	<i>Quart.</i>
Consulting	<i>Consult.</i>	Religious	<i>Relig.</i>
Contributions	<i>Contrib.</i>	Research	<i>Res.</i>
Development	<i>Devel.</i>	Review	<i>Rev.</i>
Educational	<i>Educ.</i>	School	<i>Sch.</i>
Experimental	<i>Exper.</i>	Science	<i>Sci.</i>
General	<i>Gen.</i>	Social	<i>Soc.</i>
Genetic	<i>Genet.</i>	Statistics	<i>Stat.</i>
Indian	<i>Ind.</i>	Studies	<i>Stud.</i>
Industrial	<i>Indus.</i>	Teacher	<i>Teach.</i>
International	<i>Internat.</i>	University	<i>Univ.</i>
Italian	<i>Ital.</i>		

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SENSATION-SEEKING IN ITALY AND THE UNITED STATES*

University of Maine; and University of Florence, Italy

PETER MAGARO, PHILIP SMITH,¹ LORENZO CIONINI,
AND FRANCESCO VELICOGNA

SUMMARY

Two hundred eleven male and female Italians (ages 15 to 72 years) were administered the Sensation-Seeking Scale, as well as several other personality and attitudinal measures. Relevant demographic information, such as age, education, political orientation, and occupation, was also collected. It was found that samples of male and female college students in Italy did not differ with respect to sensation-seeking scores. Cross-cultural comparisons suggested that Italian female college students are higher sensation-seekers than Japanese and Thai female college students, and similar to American students. Italian male college students appeared to be less sensation-seeking than their American counterparts, and similar to Thai and Japanese males. Factor analysis of the Sensation-Seeking Scale and demographic and personality measures yielded a profile of the high sensation-seeker.

A. INTRODUCTION

Zuckerman, Kohn, Price, and Zoob (15) describe the General Sensation-Seeking Scale-Form IV (SSS) as a means to measure differences in the degree to which persons seek various kinds of stimulation from their environment. It is a 72-item self-report inventory with a forced-choice format. Each item requires the respondent to choose between high and low sensation-seeking alternatives. For instance, on item 1 the respondent chooses between the following two statements: (a) I dislike the sensations one gets when flying; (b) I enjoy many of the rides in amusement parks.

* Received in the Editorial Office, Provincetown, Massachusetts, on March 26, 1979, and given special consideration in accordance with our policy for cross-cultural research. Copyright, 1979, by The Journal Press.

¹ Reprints may be obtained from the second author at the address shown at the end of this article

Research attempting to validate the SSS has been extensive and has demonstrated its validity for a variety of phenomena, ranging from design preferences to sexual experiences (14). In addition, the relationships between the SSS and a number of other personality scales, attitude scales, and demographic variables have been reported. However, such relationships have not been consistent. Zuckerman *et al.* (15) report significant correlations between sensation seeking and field dependency as measured by the Hidden Figures Test, but also note contradictory results. The relation with extraversion seems to be significant only in large samples (12), suggesting that the two traits only coexist in a segment of the population, and that with dogmatism follows the same pattern. Kish and Donnenwerth (8) report a negative relation in males but not in females, while Kilpatrick *et al.* (6) found no relation in a sample of males who were V.A. patients.

A number of studies have made cross-cultural comparisons of sensation-seeking. Berkowitz (1) administered a version of the SSS to Thai students and monks. He found that Thai students scored lower than American students, and the Buddhist monks scored lower than Thai students. Zuckerman *et al.* (14) compared the factor structure of the SSS in English and American samples and found good cross-national and cross-sex reliability. Zuckerman (13) reports Ohkubo's comparison of Japanese sensation-seeking with Thai and American norms. Japanese and Thai student means did not differ, but both were lower than American norms. Hence, the purpose of the present study is to extend the cross-cultural work with the SSS by examining its relationship to other personality and demographic variables in a sample of Northern Italians. In addition, the Sensation-Seeking scale along with a number of other personality, attitudinal, and demographic variables were factor analyzed in an attempt to identify the factor(s) which include sensation-seeking.

Of special interest are demographic factors: age, sex, and education. A number of studies have found negative correlations between age and sensation-seeking (7, 10). Zuckerman, Eysenck, and Eysenck (14) have also demonstrated a decline in sensation-seeking between grade school and college educated groups. However, education has not proved to be a highly significant factor in the SSS. The present study also seeks to determine whether this same relationship applies in an Italian population for men and women at different ages. Regarding sex differences, Zuckerman (13) notes a consistent trend for males to score higher than females on the SSS scale, and this hypothesis will be tested in the present sample.

B. METHOD

1. Subjects

The sample consisted of 211 Italians (101 males, 110 females) living in Tuscany, Italy. They ranged in age from 15 to 72 years old and were of various occupations and levels of education. Of these Ss 88 were college students (38 male, 50 female).

2. Procedure

Data were collected in 1976 in the community by student interviewers. The Ss completed the interviews themselves after suitable instruction. The test battery included the following scales: Sensation Seeking General-Form IV (12), Mach V (4), Altruism-Cynicism (11), Repression-Sensitization (3), Extraversion (5), Neuroticism (5), Dogmatism (9), and the Hidden Figures Test (2). Ss also provided information concerning age, education, type of school, political attitude, number of siblings, and other relevant information. If difficulty was encountered with the meaning of items, they were explained by the tester.

C. RESULTS

1. Cross-Cultural Comparisons

Table 1 shows a cross-cultural comparison of General SSS-Form IV. As noted at the bottom of Table 1, Zuckerman (13) does not provide the *SDs* for each sample; however, he notes that they were all about the same (3.4 to 3.8). The larger figure, 3.8, was used in the following analyses, on the

TABLE 1
MEANS AND *SDs* OF SCORES ON THE SENSATION SEEKING SCALE
(GENERAL FORM IV) FROM DIFFERENT SCHOOLS AND CULTURES

Sample	N	Male		N	Female	
		Mean	SD		Mean	SD
Japanese college students (13)	640	11.1	*	590	10.3	*
Thai college students (1)	329	11.1	*	196	9.9	*
U.S. freshmen (13)	296	12.8	*	280	12.0	*
U.S. sophomores and juniors (13)	686	13.4	*	850	12.6	*
Italian college students present study	38	11.7	4.2	50	12.3	4.2

* Zuckerman (13) states that the *SDs* in the college samples were all about the same (3.4 to 3.8). The higher figure (3.8) was used for purposes of statistical comparisons.

assumption that this procedure would decrease the probability of Type I errors. These results can only be taken as suggestive because of the relatively small number in the college samples.

Comparisons between the SSS scores for Italian students and those for Thai (1), Japanese (13), and American students at the University of Delaware (13) were made using *t* tests. Only two significant differences emerged from these comparisons. Italian college students (females) scored significantly higher on the SSS than Thai [$t(244) = 3.87, p < .01$] or Japanese [$t(658) = 5.23, p < .01$] female college students. Italian students (male) scored significantly lower on a SSS than male sophomores and juniors of the University of Delaware [$t(722) = -2.4, p < .01$]. None of the other comparisons yielded significance. Contrary to prediction Italian male college students did not score significantly higher on the SSS than their female counterparts [$t(86) = -.66, p = \text{n.s.}$].

2. Factor Analysis

Correlations (Pearson *r*) were calculated for the entire sample (i.e., college students as well as other Ss). For females, SSS scores correlated significantly ($p < .01$) with age ($-.28$), education ($.37$), occupation ($.25$), political orientation ($.26$), repression-sensitization scores ($-.22$) and dogmatism scores ($-.24$). Female SSS scores also showed low but significant ($p < .05$) correlations with field-independence ($.22$). For males, SSS scores correlated significantly ($p < .01$) with age ($-.43$), education ($.22$), occupation ($.32$), cynicism scores ($-.27$), and dogmatism scores ($-.32$). Male SSS scores showed low but significant ($p < .05$) correlations with repression-sensitization scores ($-.16$) and field-independence ($.17$).

All measures were included in a factor analysis (principal factoring with iteration, equimax rotation) which was performed separately on male and female data. For females, the first factor accounted for 67.9 percent of the total variance and was composed of education, occupation, Machiavellianism, altruism, and dogmatism. The direction of the loadings indicates a factor of low education, low occupational status, low Machiavellianism, high altruism and dogmatism. The second factor which accounted for 17.6 percent of the total variance was composed of age, education, occupation, sensation-seeking, and dogmatism. The direction of the loadings indicated a factor of youth, higher education, higher occupational status, and a left political orientation along with high sensation-seeking and low dogmatism. The third factor which accounted for 14.5 percent of the total variance was composed of dogmatism, field-dependence, cynicism, and extraversion. The

direction of the loadings indicated a factor of high dogmatism, high cynicism, extraversion, and field-dependency.

For males, the first factor extracted from the analysis accounted for 40.5 percent of the total variance and included education and occupational status, the loadings indicating that lower occupational status covaried with less education. Factor 2 accounted for 27.9 percent of the total variance and included age, Machiavellianism, altruism, and cynicism. The direction of loading indicated a factor of increasing age, greater Machiavellianism, low altruism, and high cynicism. Factor 3 which accounted for 16.6 percent of the variance included age, sensation-seeking, dogmatism, and field-dependency. As in Factor 3 of the female analysis, a relationship between sensation-seeking and dogmatism is suggested. Factor 4 accounted for 15.0 percent of the total variance and included political orientation, altruism, extraversion, and dogmatism. The direction of loadings indicates a factor of political conservatism, high altruism, extraversion, and high dogmatism.

Thus, analysis of male and female data yielded different factor structures. The second female factor and the third male factor indicated the covariates of sensation-seeking. The male factor showing increasing age, higher dogmatism, and field-dependency related to low sensation-seeking. The female factor showed high sensation-seeking related to lower dogmatism and youth, however, greater education, higher occupational status, and a left political orientation were also involved in the sensation-seeking factor.

3. *Relationship with Age*

Our last result concerns the reported relationship between age and sensation seeking. Age was categorized into five levels (15-19, 20's, 30's, 40's, 50's) for males, and into four levels for females (50's omitted). A one-way analysis of variance was performed separately on male and female SSS scores. Males showed a significant decline in sensation-seeking as a function of age ($F = 5.2$, $df = 4, 103$, $p < .001$). A similar analysis of the female sample failed to yield significance ($F = 1.13$, $df = 3, 93$, $p < .349$). However, an analysis of education level within age groups revealed significant differences ($F = 3.80$, $df = 3, 93$, $p < .007$). Education was higher in the 20's and 30's levels, and was thus obscuring possible age effects. Multiple regression analysis was used to determine the relative importance of age and education with respect to sensation-seeking in the female sample. With years of education entered first in the regression equation, the addition of

age accounted for another 3 percent of the variance in sensation-seeking ($F = 10.57$, $df = 2, 97$, $p < .01$). The semipartial correlation between education and SSS with age partialled out of education was .313 ($r_{SSS \cdot E \cdot A} = .38$). In summary, education accounted for a larger proportion of the variance in SSS scores (approximately 10%) than did age. Age and education were uncorrelated in the male sample. For males, age was a more significant correlate of sensation-seeking than was education.

D. DISCUSSION

Comparisons of the mean SSS scores for college students from different countries indicated that male Italians were more similar to Thai and Japanese males than they were to American males. Female Italians, however, were more similar to female Americans, being higher sensation-seekers than Thai or Japanese females. Within the Italian sample male and female students scored similarly on the SSS scale.

The correlations between SSS scores and other variables were similar to those reported in American studies. The significant correlations between the Embedded Figures Test and the SSS in both male and female samples suggests a modest relationship between field-independence and sensation-seeking, especially when considered in conjunction with the findings of Zuckerman *et al.* (15). The negative correlations obtained between Dogmatism and SSS concur with the findings of Kish and Donnenwerth (8) with the addition that the relationship held for females.

The relationship between age and sensation-seeking in males was in agreement with earlier findings (7, 10, 14). However, results with females indicated that years of education may partly explain this relationship. If the cultural condition is such that more women are receiving education now than has been the case in the past, it follows that any attempt to examine sensation-seeking as a function of age will be complicated by increasing levels of education in younger age groups. This, of course, is only relevant if education is related to sensation-seeking, which was the case in this sample.

Results of the factor analyses in both the male and female samples indicated that high sensation-seeking was associated with open-mindedness and youth. The female SSS factor, however, was more complex with higher educational and occupational status and left political orientation also showing high loadings.

In general, the results indicate that the covariates of sensation-seeking

were similar in the U.S. and Italy. However, the failure to find sex differences in the sample of Italian college students differs from earlier findings. Results suggest that either (a) high sensation-seeking females in Italy were more likely to seek education, or (b) that females and males were differentially affected by exposure to education. Whatever the nature of this relationship, it appears that female sensation-seeking is more related to socioeconomic factors than is male sensation-seeking.

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THE EFFECT OF PERCEIVED EXAMINER RELIGION ON
THE DIGIT SPAN PERFORMANCE OF LEBANESE
ELEMENTARY SCHOOLCHILDREN*

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SUMMARY

Two intellectually equivalent groups of Lebanese Christian and Moslem elementary school children were divided and assigned to three treatment conditions (total $N = 96$ boys and girls aged nine to 12 years). Pupils in the first group were individually tested by an *E* who wore a large gold cross while those in the second group were tested by the same *E* who then wore an equally large gold symbol of the Koran. The *E* did not wear a religious symbol during the third treatment. Two one-way analyses of variance and Scheffé posttests were carried out. The findings revealed that scores varied as a function of the proximity between the pupil's religion and that displayed by the *E*.

A. INTRODUCTION

Psychology's role with respect to religion may be somewhat obscure unless issues of religious utility are addressed within the parameters of observable phenomena. Viewed from this perspective, religious behavior, like other forms of behavior may be the product of the occasion upon which it occurred, the behavior itself, its consequences (14), and personal social learning experiences (2). The relationship between behavior and religion may, however, be obvious or subtle. Baptisms and Bar Mitzvahs have definite overt religious associations. Attitudes, customs, and values on the other hand may have less intelligible but equally salient religious associations. Moreover, these subtle relations may have a direct bearing on observable (i.e., quantifiable) behavior and performance.

The bulkwork of psychological measurement has traditionally rested on

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the bedrock of reliability. Authorities in the field of measurement have frequently relied on standardization data in order to obtain this all important quality (1, 4, 8). Carefully worded manuals enjoin *E*s to make particular statements or perform specific behaviors: i.e., "Arrange the pieces behind the shield" (15, p. 81), in hopes of establishing procedural equanimity. Test constructors have occasionally placed less emphasis on seemingly minor psycho-situational variables (i.e., *E* verbal praise) in their efforts to prescribe exact procedural guidelines for multifaceted tests (9, 10, 11). These variables occasionally have had a direct bearing on examinee performance (9, 11, 12) in addition to influencing the test's coefficient of reliability (11). If psychology is to profit from history and avoid previous procedural pitfalls, it should be recalled that behavior is affected by environmental events and that cultural influences will be reflected by examinee performance (1). It should be noted, however, that "every condition that affects test performance must be specified if a test is to be truly standardized" (4, p. 27).

Recent geopolitical events have placed a considerable amount of international attention on the Middle East (6). Efforts have subsequently been directed toward the rapid development of a semifeudalistic and conservative region. Psychologists and educators in keeping with this spirit are actively engaged in several projects directed toward the development of various regionally standardized measuring devices. In light of the Lebanon's long history of religious strife, and the far reaching decisions that will be made on the basis of these tests, it is incumbent upon psychologists to investigate the effects of religious symbols on the performance of students during a standardized testing situation.

B. METHOD

1. Subjects

The study took place during the month of May, 1978, and was conducted at a private rural middle-class Lebanese school with an approximately confessionally proportional (i.e., Christian-Moslem) distribution of students. The investigator preadministered the WISC (16) Digit Span subtest to 120 students who were enrolled in grades four through seven. Fifteen students were initially eliminated because their scores varied more than one standard deviation from the respective class mean. The *E* randomly selected 24 students from each class (12 Christians and an equal number of Moslems) to serve as *S*s. A total of 96 students were thereby

selected from the four classes, each class having a mean age of 9.7, 10.9, 11.6, and 12.7 respectively. Both Christians and Moslems came from monoreligious areas, and the majority of the Christians came from pro-rightist villages. Twenty-two of the 48 Christians were males, while 26 of the 48 Moslem Ss were males.

2. Procedure

Initially the *E* assigned 12 Christians and an equal number of Moslems from each class to one of three treatment conditions. The first treatment involved the administration of the digits with the *E*'s shirt partially open, revealing a large (4.5 cm by 3.5 cm) gold cross. The second treatment was similar to the first except that in this instance an equally large gold Koran¹ was worn. The *E* did not wear an icon during the third (control) treatment.

Inasmuch as research in the social sciences is occasionally affected by biasing variables—i.e., *E* effects (3), the investigator conducted the experiment under a "double blind" paradigm. Students were ascribed *S* numbers after their initial assignment to a particular treatment group. The *E* retained three cards (one for each treatment) containing a list of 24 *S* numbers. An assistant who was unaware of the study's nature kept a more comprehensive list that included both the *S* numbers and the matching identities.

The *E* was thereby able to have the Ss delivered for testing (by the assistant), without being aware of the identity of the testees. This arrangement precluded the possibility of bias inasmuch as the *E* was "blind" (3) with respect to the examinee's name and corresponding religion: e.g., Mohamad (Moslem).

The investigator kept the Ss ignorant of the proceedings by placing them in a large room prior to testing. The assistant individually accompanied every *S* to the testing room and later to a playground in order to prevent the possibility of their interacting with those to be tested. In this way the principal investigator was able to institute the second part of the paradigm. Finally, the *E* praised all of the Ss for a job well done in order to alleviate any anxiety which may have ensued.

The WICS-R Digit Span subtest (17) was selected as an index of the dependent variable because of its generally culture free nature and its

¹ Lebanese Moslems frequently wear golden facsimiles of the Koran suspended from golden chains about their necks. To wear such an object is an immediate indication of Islamic predilection.

ability to reflect examinee anxiety (5). Raw scores were used in lieu of scaled scores inasmuch as the WISC-R does not have Lebanese norms.

C. RESULTS

A one-way analysis of variance was computed and found to be significant for the three Christian groups [$F(2, 44) = 22.03, p < .001$]. Subsequently, a Scheffé (13) posttest was carried out in order to identify the significantly different pairings. The comparison of those Christian *Ss* who thought that they were being tested by a Christian *E* ($M = 12.06, SD = 1.52$) versus those who thought they were being tested by a Moslem ($M = 8.00, SD = 2.00$) was significant [$F(2, 44) = 41.75, p < .0001$]. Analogously, the comparison of the former group to the neutral examined group ($M = 10.56, SD = 1.32$) yielded a significant value [$F(2, 44) = 5.87, p < .01$]. The final comparison between Christians receiving the "Christian" treatment versus the neutral *E* treatment yielded a statistically significant difference [$F(2, 44) = 17.10, p < .001$].

A one-way analysis of variance for the three Moslem groups also indicated a significant difference [$F(2, 44) = 5.49, p < .01$]. A Scheff posttest for the Moslems who were examined by the "Christian" *E* ($M = 9.31, SD = 1.83$) versus those Moslems who were tested by a "Moslem" ($M = 11.50, SD = 2.06$) was statistically significant [$F(2, 44) = 10.93, p < .001$]. The difference between Moslems receiving the Christian *E* treatment and those Moslems receiving the neutral treatment ($M = 10.25, SD = 1.43$) was nonsignificant [$F(2, 44) = 2.01, p < .05$]. Finally, the difference between those Moslems who thought that they were being tested by a member of their own faith as compared to Moslems who were tested by an *E* under the neutral conditions was significant [$F(2, 44) = 3.56, p < .05$].

D. DISCUSSION

Clearly the perceived religion of the *E* had a considerable effect on performance. This may imply that the cross or Koran may have mediated some internal response (i.e., anxiety or affiliation) which then affected performance. The region's history of religious strife in addition to the prevailing political crises, must be viewed as major determinants of the behavior which ensued. Moreover, this behavior may be indicative of the general Lebanese attitude toward their compatriots after more than 13 centuries of intermittent hostility. In light of this, it is not surprising to note

that the students' performance may have been considerably affected according to the perceived relationship of their religion to that of the *Es*.

Previous occidental studies have suggested that individuals with strong religious convictions tend to hold similarly strong views about a variety of issues (14), and similar views are major determinants of personal attraction (7). Although the Lebanese are not overly religious *per se*, religiously associated mores are of considerable import in their everyday lives. Communities are frequently segregated from one another (on the basis of religion) and specific community attitudes prevail. Viewed from this perspective, the *Ss* who thought that they were being examined by a member of their faith may have initially perceived an attitudinal similarity which increased rapport and augmented a more optimal level of performance. Conversely, if the examinees felt an attitudinal disparity because of perceived confessional conflict, their effort and performance may have been affected due to reduced rapport. Moreover, the *Ss* were elementary school children and the administration of a "test" by an adult *E* of the opposite faith may have elicited a degree of anxiety which could have effected their performance on the anxiety sensitive subtest.

The meaning of those multiple comparisons which were computed in association with the neutral treatment require additional explanation. Initially, the examination was conducted in English as a result of institutional regulations. Moreover, the *E* spoke with an American accent since he is an American. The accent may have led the *Ss* to reason that the neutrally dressed *E* was an American and subsequently a Christian because the majority of Westerners are Christians. The nonsignificant difference which was noted between the Moslem group's "Christian" neutral *E* comparison may have been due to the aforementioned explanation. The same explanation is tenable with respect to the significant difference which was observed for both Christian and Moslem students when the "Moslem" neutral treatment comparison was made. In this instance the examinees may have felt that their neutrally attired *E* was a Christian because of his American accent, and the ensuing behavior may have been induced by those reasons which were noted for the nonsimilar *E*-examinee confessional comparisons.

The statistically significant difference between Christians for the "Christian" and neutral treatments appears to contradict the American accent explanation. Upon further consideration, however, these findings may be indicative of politicoreligious symbolism in addition to the latter explanation. The overt display of a large (golden) crucifix on a man's chest frequently conveys a double meaning in the Lebanon at this point in time.

It not only denotes the wearer's religion but also may indicate that he is a Christian-rightist militiaman. Inasmuch as not all Lebanese Christians are rightist and since the majority of the Christian Ss came from prorigtist areas, it is possible that the students may have identified themselves with and felt more at ease with a perceived protector of their faith and way of life. If this occurred, the previous hypothesis that interpersonal attractions (resulting from similar attitudes) will facilitate rapport and subsequent test performance seems plausible. The neutrally dressed *E* may have been perceived as an American Christian and this image may have had a lower affective valance than in the former case.

With respect to individually administered tests in the Lebanon, performance may vary qualitatively as a function of the association between the *E* and the examinee's religion. The implications of this observation may be of concern to test developers and social psychologists in the Middle East and in countries where more than one form of religion is practiced. The need to establish the cross-cultural generalizability of these findings does however remain to be established. Specialists within the field of measurement may view these findings with concern inasmuch as the observed variations may represent a source of unsystematic error that could lead to lower reliability coefficients and estimates of validity. Viewed from this perspective, psychologists in their efforts to account for individual differences may wish to note that religious affiliations conveyed symbolically may have a significant impact on attitudes, interpersonal relations, and individual performance.

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THE SENSITIVITY OF CHINESE AND AMERICAN CHILDREN TO SOCIAL INFLUENCES*1,2

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SUMMARY

The present experiment studied cross-cultural differences in imitation and conformity between American and Chinese children in a series of ambiguous perceptual tasks. Three hundred and twenty Chinese and American second-grade boys and girls were exposed to experimental treatments, such as material reinforcement and model status/competence manipulations, and their imitation of the choices of 40 models in a paired setting was analyzed. As compared to a single, continuous measurement of imitation, a two-dimensional conformity-anticonformity-independence framework was more discriminative and was able to show the following cultural differences: (a) more Chinese were either conformers or anticonformers, and more Americans were independent of the model's choice; (b) Chinese were more sensitive, whereas Americans were more indifferent to the status/competence treatments of the model; (c) Chinese girls conformed more than Chinese boys whereas no difference was found between American girls and boys. However, the material reinforcement used failed to influence children of either nationality in any significant way. Thus Hsu's hypothesis that Chinese children are socialized earlier in life and are more responsive to environmental influences than American children was partly supported.

A. INTRODUCTION

Research on the relationship between age and conformity has been somewhat contradictory. Originally, Berenda (3) found that conformity

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¹ Requests for reprints should be sent to the author at the address shown at the end of this article.

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decreased with age between 7 and 13. This inverse relationship was subsequently supported by several investigators (4) and rejected by others (15). A curvilinear relationship has also been suggested (7, 23). Many other variables have been studied in order to account for this apparent discrepancy. Klein and Birren (15) found that, when perceived competence became similar, the age difference in conformity began to break down. Hoving, Hamm, and Galvin (10) stressed the importance of the stimulus tasks used in conformity studies, that conformity increased with age when the tasks were ambiguous, decreased with age when the tasks were nonambiguous. However, Hoving's explanation could not adequately account for the findings of some more recent studies (1, 6) which lead to the suggestion that conformity was affected by age only indirectly through its effects on other situational variables, such as change in social norms.

Despite the inconsistent results on age and conformity, very few studies have investigated the conformity behavior of young children age 7-8 and below (5), especially children from different cultures. Because of the difficulty in actually demonstrating young children's conformity behavior, it has been suggested that children under age 7-8 might be too young to be sensitive to social pressure (7). The question arises as to whether the same developmental pattern and the insensitivity to social influences as suggested for young children of this culture would hold for other cultures. In one of the rare cross-cultural, developmental studies on conformity, Sistrunk *et al.* (23) compared American and Brazilian students from 9 to 21 years in an Asch-type study. Americans were found to be generally insensitive to the tasks used and to conform little across ages as compared to Brazilians, who showed both increased and higher levels of sensitivity to the judgmental stimuli across ages, thus suggesting the need for more developmental studies on the variable of cultural influences and children's sensitivity to **various factors in social influences.**

Traditionally, Chinese life has been characterized as situationally centered and mutually dependent (11). Several recent experimental studies further demonstrated that Chinese were more conforming than Americans in several settings (12, 21). It was therefore reasonable to suggest that Chinese children would be more conforming than American children. Furthermore, as Hsu suggested (11), Chinese children are introduced into the adult world early in life in a continuous and gradual pattern; they are conscious of the power exercised by the environment and are responsive to environmental influences. The American child, according to Hsu, is raised in a child-centered world and sheltered against the reality of the adult

world, his environment is sensitive to him, and he expects the environment to conform to his needs. The present study hypothesized that young Chinese children's behavior should be more affected by the experimental manipulations of social influences, such as material reinforcement and model status competence than young American children's behavior.

The present study employed a two-dimensional model of conformity (9). Conformity has often been contrasted with nonconformity or independence, assuming a continuum with conformity at one end and its opposite, nonconformity or independence, at the other (2, 24). Such unidimensional formulations are inadequate according to some researchers (9) who argue that conformity, independence, and anticonformity are related to each other as the apexes of a triangle and that there are at least two dimensions: conformity-anticonformity, and independence-dependence. The two-dimensional conception emphasizes that both conformers and anticonformers are similar in the sense that both take cognizance of the group norm to an unusual degree, the conformers in order to agree with the norm, the anticonformers in order to disagree. The independent person differs from both because the group norm is not given any weight in his judgment. In categorizing Ss' conformity behavior into one of the three classes (conformity, anticonformity, and independence), it was predicted that if Chinese were indeed more sensitive to their environment as compared to American children, these young Chinese children would conform to the model's choices when the model either had high status or was competent or when material reinforcement was utilized. Conversely they would show anticonformity to the model's choices when the model either had low status or was incompetent, or when there was no material reinforcement. Young American children, on the other hand, would respond independently of the model's choices and be indifferent to the experimental manipulations.

B. METHOD

1. *Subjects*

Ninety male and 90 female second female second-grade children enrolled in Taipei public schools and 90 male and 90 female second-grade children enrolled in Albuquerque public schools were in the experiment. In Taipei 10 schools were randomly drawn from 112 elementary schools. In Albuquerque 10 elementary schools which had predominantly Anglo-American students and gave permission for the experiment were used. From each of the 10 schools in Taipei and in Albuquerque, a random sample of nine boys and nine girls was drawn from all the second-grade

students. Within each group of nine children, one was randomly assigned as the model for the group. The mean age for the Chinese children was 7.5 years, the mean age for the American children was 7.4 years.

2. Design

The variables studied were nationality (Chinese or American), model (high or low general status, high or low task specific competence), maternal reinforcement (reinforcement or no-reinforcement), and sex (male or female). The 10 schools in each country, each with a male model and a female model, served as a blocking factor to reduce the error variance due to models and schools. The imitation measures were only taken from the 320 Ss not from the 40 models. Therefore, the design was a $2 \times 4 \times 2 \times 2$ randomized block factorial design (14).

3. Stimuli

Thirty triads of pictures were originally constructed from various magazines. Care was taken to make sure that the three pictures in each triad were similar and that the questions asked about them sounded as if they would test the children's knowledge, rather than personal preference, of the pictures (e.g., "Which picture should get the first prize in the picture contest?"). To the best of the author's knowledge, these questions have no correct answers in the context described.

In a pilot study involving 50 Chinese children of the same age, these triads of pictures were presented from which the children picked according to each of the questions asked. Sixteen triads of pictures were selected on the basis that the three alternatives in each triad were chosen with equal frequency. Another pilot study involving 30 second-grade American children and the same 50 Chinese children indicated no significant difference between Chinese and Americans in the frequency with which they chose the 16 pictures (the biggest $\chi^2 = .8$, $df = 2$, $p > .05$).

Two different young women served as the *Es* in Taipei and in Albuquerque. The entire script was written in Chinese and English, and both versions were judged by bilingual speakers to be comparable.

4. Procedure

Children were randomly assigned to one of the eight experimental conditions by sex and by nationality. Two children of the same sex from the same school were tested at the same time; one was randomly chosen to be the *S* and the other to be the model. The same model served continuously as model for all eight children of the same sex in the same school.

The *E* started by introducing herself and then asked the *S* and model to tell her their names. If the *S* was in the model-high-status condition, the *E* would turn to the model and say with a smile, "Oh! So you are _____ (model's name). I just talked to your teacher this morning, and she said many nice things about you. She said that you are the smartest and most liked student in the whole class. I am really very happy to meet you." If the *S* was in the model-low-status condition, the same thing was said to the *S* instead, that the *S* was the smartest and best liked student in the class, in order to manipulate the perceived differential status between *S* and model. The *E* then started the experiment, which included a competence manipulation phase and an imitation measurement phase.

a. *Competence manipulation phase.* The *E* told the children that they were going to play a game, that there was a correct picture for each question asked, and that they were supposed to pick the correct ones. For the half of the *Ss* who were in the reinforcement condition, a box full of prizes was shown, and it stayed visible throughout the whole period the *S* and model were there. The prizes were a variety of sex-irrelevant items, such as coloring pencils and colorful balloons in a set of three. For those who were in the model-competent condition, the *S* was told "wrong" and the model told "right" for all four choices each of them made. For those who were in the model-incompetent condition, the *S* was told "right" and the model told "wrong" for all four choices each of them made in order to manipulate the perceived differential competence between the model and the *S*. For those who were not in the competence-manipulation conditions, both the *S* and the model were randomly told "right" two times and "wrong" two times.

For the *Ss* and models in the material reinforcement condition, a "right" response was accompanied by a token toward the prize of the child's choice, while a "wrong" response was merely called wrong. For the *Ss* and models in the no-reinforcement condition, only verbal feedback was given about the "correctness" of their responses.

b. *Imitation measurement phase.* Subsequent to the competence manipulation phase, the *S* and model were told: "Now we are going to play the game a little differently. I am not supposed to say anything about whether you are right or wrong. But I will write down what you picked in my notebook and keep a record of how many times you are right and how many times you are wrong." To the *Ss* and models in the reinforcement condition only, she added, "If you are right many times, you still have a chance to get one of the prizes."

In this phase there were eight triads of pictures presented to both the

model and the S. The model picked first, and each time the S picked the same picture as the model did, it was counted as one point, with the maximum possible imitation score being eight and the minimum possible score being zero.

C. RESULTS

Imitation scores in the form of the original interval data based on the unidimensional model of conformity were first analyzed. The same scores were then converted into conformity-anticonformity-independence nominal data based on the two-dimensional model of conformity, in order to provide a contrast between the discriminant power of the different models.

1. Amount of Imitation

Analysis of variance on imitation scores for the $2 \times 4 \times 2 \times 2$ randomized block design revealed a significant model-manipulation effect ($F = 6.87$, $df = 3/279$, $p < .01$), sex effect ($F = 8.19$, $df = 1/279$, $p < .01$), and interaction between sex and reinforcement ($F = 3.54$, $df = 1/279$, $p < .05$). Tukey's *Honestly Significant Difference* (14) revealed that the imitation scores were significantly higher when the model was either competent or had high status than when the model was either incompetent or had low status. Girls had higher imitation scores than boys. The interaction between sex and reinforcement suggested that, although girls' imitation behavior did not differ under different reinforcement conditions, boys imitated the models significantly more when reinforcement was provided in the experiment and imitated significantly less when no reinforcement was available in the experiment.

2. Conformity-Anticonformity-Independence Measurement

The 16 triads of pictures used as stimuli in the study were selected on the basis that the three alternatives in each triad were chosen with equal frequency in the pilot study. It was assumed that the Ss' selection of each picture during the imitation measurement phase would have a $1/3$ probability by chance alone. The scores 1 to 5 ($p = .942$) were classified as independence, or chance occurrence; score zero ($p = .039$) anticonformity and scores 6 to 8 ($p = .019$) conformity, for deviating from the model's choices significantly beyond the .05 chance level. Based on this two-dimensional model of conformity, each Ss imitation score was categorized into one of three categories: conformity, anticonformity, and independence. Chi square tests were performed on each of the main effects and on the interactions

between nationality and each of the main effects. If a χ^2 turned out to be significant ($p = .05$), then partition of χ^2 was performed to determine the source of interaction. Whenever a difference is indicated in the following section, it has been tested by Chi-square and found to be significant at least at the .05 level.

a. Nationality. The number of Chinese and Americans in three categories was significantly different. Further partition showed that (a) more Americans (89%) than Chinese (76%) were independent and more Chinese (24%) than Americans (11%) were conforming to the model's choices, and (b) more Americans (71%) than Chinese (44%) were independent and more Chinese (56%) than Americans (29%) were classified as either conformers or anticonformers.

b. Sex and sex-nationality interaction. The number of boys and girls in three conformity categories was different. Further partition showed that (a) more boys (85%) than girls (63%) were anticonformers and more girls (37%) than boys (15%) were conformers, and (b) no difference was found between the number of boys (59%) and girls (56%) classified as independent, and the number of boys (41%) and girls (44%) classified as either conformers or anticonformers.

The number of Chinese boys and girls in three categories was also different. Further partition showed that (a) more Chinese boys (89%) than girls (62%) were anticonformers and more Chinese girls (38%) than boys (11%) were conformers, and (b) no difference was found between the number of Chinese boys (45%) and girls (44%) classified as independent, and the number of Chinese boys (65%) and girls (64%) classified as either conformers or anticonformers.

The number of American boys and girls in three categories did not differ.

c. Competence and competence-nationality interaction. The number of children who saw either a competent or an incompetent model was different in three categories. Further partition showed that (a) more children seeing a competent model (34%) than those seeing an incompetent model (8%) conformed to the model's choices, and more children seeing an incompetent model (92%) than seeing a competent model (66%) showed anticonformity to the model's choices, and (b) more children seeing a competent model (74%) than seeing an incompetent model (56%) either conformed to or were independent of model's choices, and more children seeing an incompetent model (44%) than seeing a competent model (26%) showed anticonformity to the model's choices.

The number of Chinese children in the same 2×3 table was also differ-

ent. Further partition showed that (a) more Chinese seeing a competent model (41%) than seeing an incompetent model (8%) conformed, and more Chinese seeing an incompetent model (92%) than seeing a competent model (59%) showed anticonformity, and (b) no difference was found between the number of Chinese who saw a competent model (45%) and who saw an incompetent model (35%) classified as independent, and number of Chinese who saw a competent model (55%) and who saw an incompetent model (65%) classified as either conformers or anticonformers.

The number of American boys and girls in three categories did not differ.

d. Status and status-nationality interaction. The number of children seeing either a high or low status model differed in three conformity categories. Further partition showed that (a) more children seeing a high status model (55%) than those seeing a low status model (16%) were conforming and more children seeing a low status model (84%) than seeing a high status model (45%) showed anticonformity, and (b) more children seeing a high status model (84%) than seeing a low status model (61%) either conformed or were independent, and more children seeing a low status model (39%) than seeing a high status model (16%) showed anticonformity.

The number of Chinese children in the same 2×3 table was also different. Further partition showed that (a) more Chinese children seeing a high status model (76%) than those seeing a low status model (39%) showed independence, and more Chinese seeing a low status model (61%) than seeing a high status model (24%) showed anticonformity, and (b) more Chinese seeing a high status model (80%) than those seeing a low status model (45%) either conformed or were independent of the model's choices, and more Chinese seeing a low status model (55%) than those seeing a high status model (20%) showed anticonformity to the model's choices.

The number of American children in the same 2×3 table did not differ.

e. Reinforcement, reinforcement-nationality, and reinforcement-sex interactions. A χ^2 analysis of the relationship between reinforcement and three conformity categories was insignificant for all children, for Chinese children alone, and for American children alone.

A χ^2 analysis of the same 2×3 table was insignificant for girls, but was significant for boys, with 9%, 62%, and 29% boys in conformity, independence, and anticonformity categories respectively under reinforcement condition, and 4%, 47%, and 41% respectively in the same categories in the no-reinforcement condition. However, the partition of the χ^2 for boys failed to show any significant effect.

D. DISCUSSION

When the imitation scores were used as the dependent measurement, the predicted differential sensitivity to the experimental manipulations between Chinese and American children was not found. However, when the imitation scores were categorized into conformity, independence, and anticonformity based on a two dimensional model of conformity, a significant nationality difference and significant interactions between nationality and experimental conditions emerged. Chinese children were found to be more dependent (conforming and anticonforming) than American children, whereas American children acted more independently of model's choices. This difference could not be shown in a single, continuous measurement of imitation scores because the low score of anticonformity canceled out the high score of conformity and resulted in a score comparable to that of independence. Therefore, the Chinese children who demonstrated predominantly conforming and anticonforming behavior would have a mean imitation score not much different from that of the American children who had predominantly independent behavior. A two-dimensional model of conformity, on the other hand, was more discriminative and supported Hsu's hypothesis that, compared to Americans, Chinese children are more conforming and more socially dependent.

The two-dimensional model of conformity was also able to reveal the differential sensitivity of Chinese and American children to the model manipulations. Chinese children were found to be sensitive to the model's manipulations, as more Chinese *Ss* conformed to the model when he was competent or had high status, and showed anticonformity to the model when he was incompetent or had low status. American children's behavior, on the contrary, was not influenced by the model manipulations. These findings also supported Hsu's hypothesis that Chinese children, when compared to American children, are more responsive to environmental influences, at least in situations such as those manipulated in the present experiment where model status and competence are the key influences.

Although the analysis of variance based on imitation scores failed to reveal any interaction between nationality and the model manipulation, it did reveal a significant main effect of the model manipulation. *Ss* imitation scores were shown to be significantly higher when the model was either competent or had high status than when the model was either incompetent or had low status; there was no difference between the effects of status and competence manipulations. With the use of the two-dimensional model of conformity, the status and competence manipulations also were found to

have similar effects on the Ss' behavior: with a competent or high-status model, Ss tended to conform to the model's choices, whereas with an incompetent or low-status model, Ss tended to show anticonformity to model's choices. These findings supported the earlier results that people were likely to imitate or conform to the behavior of a model, particularly when the model was high in general status or specific task competence (12, 17, 19, 20). The present findings further suggested that people were likely to be anticonformists, or act differently from a model, when the model was low in general status or specific task competence.

The material reinforcement manipulation in the present study failed to produce any predicted result, only an unpredicted interaction between sex and reinforcement through analysis of imitation scores, and a similar trend through χ^2 analysis of conformity categories. The interaction suggested that boys imitated more when reinforcement was provided and less when reinforcement was unavailable, whereas girls were indifferent to the reinforcement. It was rather difficult to explain why such sex differences existed when the reinforcers used should be equally attractive to both boys and girls. Could it be that boys were more cost oriented than girls, as suggested by some studies (8)? It was also puzzling why Chinese children were not more sensitive to the reinforcement treatment if they were actually more responsive to the environmental influences. This result could be because of the cultural de-emphasis on material rewards (22), which might have reduced the perceived difference between the reinforcement and no-reinforcement conditions for the Chinese. It would be interesting to test this hypothesis in a future study by comparing Chinese children's reactions to verbal praise and material reward.

The often cited finding that girls show a higher level of conformity than boys was again demonstrated. A χ^2 analysis based on the three categories of conformity behavior revealed that more boys were anticonformers and more girls were conformers. Although American boys and girls did not differ significantly in their conforming behavior, Chinese boys and girls showed the same pattern of response as the total children, suggesting that Chinese Ss were the main source of the effect found in the total group, which supported a previous finding (25). Furthermore, the analysis of variance of the imitation scores also revealed a significant sex effect that girls as a whole had a higher imitation score than boys. The higher amount of conformity in females has been attributed by some researchers to the different social roles assigned to males and females (16) and by some other researchers to the earlier development and socialization in girls, or to the

masculine nature of most of the tasks used in conformity studies (18). The task used in the present experiment, unlike the perceptual tasks used in most conformity studies, was not masculine oriented. Therefore, it seemed unlikely that girls felt incompetent about their ability on the task and thus conformed more. Although the imitation measurement showed only that girls conformed more than boys, the two-dimensional model of conformity revealed further that both boys and girls were under social influences, girls reacting to the influences by conforming, boys reacting to the same influences by showing anticonformity. Therefore, the hypothesis that girls are more conforming because of their earlier development and socialization was also not supported. The reason that boys and girls reacted quite differently under the same social influences could be because of the socially prescribed roles assigned to the male and the female children. The influence of these prescribed social roles was probably stronger for Chinese children if they were taught to be sensitive to the environmental influences early in life.

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THE SCARS OF BONDAGE: BLACK AMERICANS AS SUBJECTS IN BEHAVIORAL SCIENCE RESEARCH*¹

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SUMMARY

An extensive literature in the behavioral sciences has argued that structured social inequality and racial discrimination have had profound effects on the personalities and self-identities of black Americans. Notably, the experience of racial discrimination has led, it is claimed, to numerous psychological disorders and disabilities among its victims. A critical review of this literature leads to the conclusion that the evidence for this near consensus concerning the "scars-of-bondage" is meager and quite equivocal. Indeed some evidence exists which supports the contrary view that permanent psychological injury has not occurred despite undeniable suffering and privation. Conclusions are offered concerning (a) how a thesis with such little support could become a widely held "finding" in the behavioral sciences and (b) how a more robust and rigorous assessment of the psychological affects of social and/or racial subordination might be undertaken.

A. INTRODUCTION

An extensive literature in the behavioral sciences and psychiatry deals centrally with the ambitious and timely question: What are the effects of colonial or other societal inequality on the values, personalities, and self-identities of subject peoples encapsulated in the bottom layers of such systems? This question raises numerous, vexing issues of epistemology.

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methodology, and interpretation in social inquiry. Despite this, there exists wide agreement in the human sciences that the institutional oppression of a people leads inevitably or with high probability to the appearance of specific disabilities or pathologies in personality and ego-identity.

This article will attempt to summarize the thesis (called hereafter the "scars-of-bondage") by citing prominent scholars who have supported or advanced it. Then a critical appraisal of the body of knowledge will be undertaken. The critique will seek to demonstrate the highly equivocal support for the thesis—indeed, its palpable falsity. The purport and motivation of the paper flow from research the author carried out among the Tswana of Southern Africa (2). These people have been the Ss, the victims, of a draconian colonization process carried out over the past 150 years and continuing today in the form of abject material dependency on Southern Africa's colonial political economy presided over by the Republic of South Africa. A three-year intensive investigation of self-identity and value among the Tswana failed to discover any of the putative effects of bondage on "personality" so frequently claimed to obtain among minority peoples, especially black Americans. While the attempt will be made to show that the permanent mental afflictions occasioned by institutional racism have not been so marked or severe as previously held, it must not be presumed that the evils of institutional racism are fewer, nor are its effects on the life-chances of its victims structurally less devastating. The need to rid our society's institutions of racism and discrimination is a paramount social obligation. The effort to treat imagined psychic scars suffered by black people simply diverts attention from this essentially institutional problem.

How is it that a thesis, for which there exists but the most meager of empirical substantiation, could become, over the past three decades, a more or less unquestioned "finding" in the behavioral sciences? Indeed, the work in Africa just cited and that of a few other scholars working in North America provide quite solid ground for arguing that the scars-of-bondage are largely a myth. How, then, could meticulous, charitably and scientifically motivated researchers make and corroborate this finding over and over again? This is an intriguing question for the sociology of knowledge.

B. EXAMPLES OF THE LITERATURE

The scars-of-bondage thesis is compellingly argued in the literary work of Fanon (11) and Wright (29). More directly pertinent to the critique offered here are the claims of social and behavioral scientists, such as Strauss (26), Dai (6), and Kardiner and Ovesey (13). The latter have

provided a seminal formulation, one emulated in substance by many subsequent writers and researchers:

The Negro family particularly in the lower classes suffers a great deal of disorganization. Basic here is the lesser economic opportunity of the Negro male. The economic necessity for sharing households is another factor that contributes to Negro family disorganization. The unhappy economic plight of the Negro male not only contributes to the economic dominance of the Negro female, but also makes her psychologically dominant. Such a situation does not enhance family cohesion. . . . Negro mothers are often loveless tyrants while fathers are absent or, if present, oscillate between two poles: seclusive, taciturn, violent, and punitive or submissive to the mother [wife?]. The disciplinary treatment of children in the lower classes is characterized by its inconsistency. Beatings without provocation are common. Children cared for by uncles and aunts and other relatives or friends are generally subject to cruel treatment . . . (13, pp. 59-68).

For Kardiner and Ovesey the correspondences between structured inequality and personality are direct, simple, and nearly inevitable. They suggest that low self-esteem leads to self-hate and ethnic shame along these lines: low self-esteem → idealization of whites (+ frantic effort to be white) → failure (because this goal is unattainable) → hostility to whites → introjection of white ideal → self-hate → hate projected onto other Negroes. Control of one's self-hate and rage is necessary because of fear of retaliation by all-powerful whites. Fear and rage coexist in the Negro. The simultaneous existence of these motives causes severe anxiety, often expressed as hypertension and other psychosomatic and hysterical symptoms (13, pp. 302-304).

Allport (1) echoes Kardiner and Ovesey in his lengthy discussion of the psychological effects of prejudice and discrimination on the ego or personality of victim peoples, particularly black people in the United States. He asks, "Why is there such a prevalence of ego-defensiveness among Negroes?" (1, p. 139). Continuing, he claims: "every form of ego-defense may be found among members of every persecuted group. . . . Some [minority groups] will be so rebellious at their handicap that they will develop many ugly defenses. These unfortunates continually provoke the snubs that they resent" (1, p. 140). Allport enumerates the most common "defensive reactions" found among persecuted minorities: obsessive concern/sensitivity, denial of membership (in a persecuted group), withdrawal and passivity, clowning, strengthening the ingroup, slyness and cunning, self-hate, aggression against oneself, prejudice against outgroup, symbolic status-striving, and finally neuroticism (1, pp. 141-154).

The essential substance of Allport's and Kardiner's work is replicated or amplified in the field and experimental studies conducted by Davis and Dollard (7), the Clarks (4), Rohrer and Edmondson (23), Mischel (17, 18), and Morland (19, 20).

The conclusions of these and numerous concordant studies are summarized by Pettigrew (22). Concerning the documented effects of the "Negro role" on personality development, he states: "He [the Negro] is almost always acting. At the personality level such enforced role adoption further divides the individual Negro from other human beings and from himself" (22, p. 4). The Negro has a hard time acquiring a positive self-image, Pettigrew says, because all around him are unfavorable images of blacks coupled with favorable images of whites denigrating blacks. Moreover, the Negro suffers lowered need achievement as a result of his dependency, lack of ability to defer gratification because of the absence of a father figure, sex identity problems stemming from family disorganization, and weak ego stemming from the lack of a warm stable home (22, pp. 11-22).

By no means do all Negro Americans succumb to these problems. Those reared in stable, accepting families generally develop the psychological resources to withstand the most debilitating aspects of the Negro role. But racial discrimination from the time of slavery to the present creates a type of family disorganization which causes many Negroes to be especially vulnerable to the role's full effects. The absence of the father in a sizeable minority of Negro homes is particularly critical for personality development. Socialization without the agency of the father may be an important contributor to . . . juvenile delinquency, crime against persons and schizophrenia (22, pp. 25-26).

C. A CRITICAL APPRAISAL

The evidence supporting these summary conclusions is meager and is contradicted by a less vast, but high quality literature, which has in the main been *ignored* in the writing cited. On the basis of his own psychiatric experience, Sullivan has observed (27, p. 328), "it was easy [in his investigations] to discover not one general type, but very wide differences of personality among Negro youth in the Southern area. *It is impossible to find much of anything that is unique or general about American Negro personality* . . . [emphasis mine]." In a more positive vein, he remarks:

[among Negro Ss] . . . a timeless, formless, optimism about life in general seemed to be remarkably widespread even in obsessional personalities. . . . I could not help but conclude that the Negro had escaped in some way those cultural-personal necessities which had compelled the Western Europeans to look for another world. Religious practices [of blacks in the South] have impor-

tance but the effective religious beliefs, attitudes and behavior do not seem to be functional counterparts of the circumambient white culture (27, p. 332)

Coles confirms Sullivan's view in his observation that "they [black youth] have persisted in social action despite retaliatory arrests, brutalities, and jailings, *without discernible psychiatric harm or collapse*. Modern psychiatry must certainly ask why children subjected to such strains survive so handily" (5, p. 319). He summarizes the obvious methodological problem alluded to here: "I think research into what it means to be a Negro will sooner or later meet up with the methodological hazards involved in abstracting people on racial grounds and then talking about 'their' feelings" (5, p. 334). Yet, "discussing the feelings" of socially or demographically abstracted population aggregates is a commonplace in much empiricist social science, as is the converse of expanding "psychological-types" into whole populations.

Thirty-five years ago, Klineberg drew timely conclusions from work then available:

This survey of the studies in the field of Negro personality has yielded few definite conclusions. The general difficulty which runs through all the investigations is mainly one of satisfactory equating of the groups to be studied . . . As far as actual results are concerned, the questionnaire studies are important mainly for raising the question of the validity of particular items and of the variations in their meaning for different culture groups. . . . The . . . questionnaires have so far shown little of importance [regarding Negro-white differences]. The differences between Negro and white personality as reflected in tests and experiments seem not to be marked. There is inconsistency of findings and significant differences are rare (14, pp. 137-138).

Contradictory research findings constitute but one of several reasons for presuming the equivocality of the scars-of-bondage thesis. The social and experiential distance of many scholars from the life-world of the poor often fosters naive or daring interpretations of research findings. As an example, Mischel (17, 18) has sought to discover whether there exists a relationship between "preference for immediate reinforcement" (vs. "delayed reinforcement") and a number of other characteristics of mind or behavior including "need for achievement," "propensity to acquiesce to social pressure," and "sense of social responsibility." He hypothesized that preference for immediate reinforcement is associated positively with delinquency, negatively with intelligence, and negatively both with social responsibility and, most importantly, with absence of a father and general poverty. He then stipulated that the *measure* of "preference for immediate *versus* delayed reinforcement" would be as follows: Ss will be allowed to choose between a

small candy bar consumable immediately vs. a large candy bar obtainable a week later. Further, they will be asked the following question: Would you prefer \$10 now or wait 30 days and receive \$30? The Ss in the experiment were 112 Trinidadian Negro children ages 11-14, from urban environs, and primarily from the lower middle and lower socioeconomic strata of the society (17, p. 545).

On the basis of the Ss' responses to that manipulation, the author claimed confirmation of his hypothesis that preference for immediate reinforcement is associated with the other variables cited. Now it is apparent that such children come to school in varying degrees of hunger. Quite probably, the poorest of the children—those whose fathers are most likely absent—would be the hungriest at the time of the experiment. Clearly, such a candy-bar treatment would confound the issue of a personality trait with that of immediate felt hunger. Nowhere does Mischel address this problem.

Lack of data on, or familiarity with, the cultural milieu severely limits the pertinence of Davis and Dollard's *Children of Bondage*. Their findings concerning social class and its effects on black personality were based on intensive interviews with eight black adolescents selected from a group of 30, whose "autobiographies" had previously been compiled. In addition, they conducted a survey of 123 other black children and their parents on the topic of "parent-child relations" and "attitudes toward white people." Now much can be learned from intensive study of eight adolescents and the questioning of 123 others. But *Davis and Dollard's acquaintance with the subjects was confined to interviews conducted at the children's school*. Dollard himself has stipulated in his discussion of the *life-history* as a research tool in social science that "the life-history [is] a deliberate attempt to define the growth of a person in a cultural milieu and to make theoretical sense of it. . . . The taking of a life history is . . . a problem of the student of culture. . . . They [who deal with the life-history] are students of culture by definition . . ." (10, pp. 3, 4). Moreover, in *his* criteria for adequate gathering of the materials that constitute the life-history, Dollard stipulates the following: "the subject must be viewed as a specimen in a cultural series, . . . the peculiar role of the family group in transmitting the culture must be recognized; . . . the 'social situation' must be carefully and continuously specified as a factor . . ." (10, p. 8).

The Davis and Dollard autobiographical study lacked the ethnographic data that would constitute the "cultural or social milieu" in which these children lived. Consider the intimate knowledge of an individual and his community one would have to have in order to make an assertion like "the

lower-class child is usually a child of the streets, able to explore . . . the beer parlors, the cabarets and the free world of sex." Little evidence is cited to support this kind of categorical generalization. The authors simply *surmise* it. These characterizations are—I believe—the stock of common-sense stereotypy found among middle-class Americans and elevated to the status of cultural descriptions. There are numerous problems involved in eliciting beliefs in a setting like a schoolroom where an academic person from out of town is asking deeply personal questions. When a mother describes her child-rearing practices to a "high status" interviewer-stranger, it is natural that she will be concerned with how she appears to that other, with what she says, and with what impressions she wants to create. Whether the child experiences anything remotely like what the mother has reported as her "child-rearing practices" is problematic, given no independent, intensive, and extensive observation of the cultural milieu.

Inferences concerning neurotic and other disorders among minorities are often made from skimpy or tangential evidence. In substantiating his conclusions about "traits due to victimization," Allport cites but four pieces of research: (1, pp. 138-158). (a) a 1951 survey of Negro conceptions of white people; (b) a 1953 survey of ethnic prejudices of white and Negro college students; (c) K. B. Clark's report of the 1943 Harlem riots; (d) A four-page report in the *Transactions of the N.Y. Academy of Sciences* on minority personality and adjustment, which was itself an abstract theoretical statement. Further inferences on the putative effects of victimization are made solely on the strength of tangential or "analogic" evidence, such as Bettelheim's account of the Nazi concentration camps, Kurt Lewin's study of self-hatred among Jews, and Stouffer's study of the American soldier in World War II. This is a rather slim basis for a confident diagnosis of mental infirmities.

The problem of sample size and bias plagues many studies of personality among minority peoples. Kardiner and Ovesey (13) based their conclusions on research conducted among only 25 black people. Even more disturbing is their candid admission of how they recruited these 25 individuals to participate in their psychiatric research. They asked rhetorically, "Who has sufficient incentive to expose his inner life to the scrutiny of another person? . . . Those who had something to gain. The lure of therapeutic gain was held out to some . . . The incentive of scientific cooperation was held out to others . . . and finally we paid some of our subjects" (13, pp. xiv-xv). The Ss were lured from the Northside Center for Child Development; Psychosomatic Clinic, Columbia Presbyterian Hospital; Psychiatric

Clinic, Mt. Sinai Hospital; Psychoanalytic Clinic, Columbia University; New York City Bureau of Child Guidance; and the Community Service Society of New York City. The problem of sample bias is patently clear here.

A prerequisite to any psychiatric interpretation of social behavior is a thorough knowledge of the cultural meaning of that behavior in the life-world of the individual. Yet Kardiner and Ovesey (13), among many others, have ventured to impute mental disabilities to people about whose culture and social life they in fact know very little. While Kardiner and Ovesey claimed that "American Negro sociology is one of the best documented in the world" (13, p. xiv), Blum and Rossi could state some 20 years later that "a study of the structure and functioning of the Negro family in the United States, to the best of our knowledge, has not been published . . ." (3, pp. 348-349). In particular, they note that Frazier's "classic" study of the Negro Family was based on "relatively slight research" (3, p. 349). Yet it was against the background of this very book that Kardiner and Ovesey offered their psychiatric inferences concerning the mental scars sustained by black Americans.

With the exception of a few very recent monographs—for example, those of Valentine (28), Liebow (16), Hannerz (12), and Stack (25)—there are no accounts of the culture and social life of black Americans which could serve directly as bases for the psychiatric inference of classwide mental disorders.

The published literature dealing with those on the very bottom of the stratification system is on the whole somewhat limited. . . . Few studies have been concerned with describing the characteristics of the very poor. . . . Most of the writers have been so impressed with the finding that socioeconomic position . . . is associated with a variety of dependent variables that they have not taken the further steps of assessing the strength or degrees of relationship . . . (3, pp. 347-348).

Psychological and psychiatric studies of minorities are based on norms and diagnostic categories established on the basis of clinical practice among the urban bourgeoisie.

The dangerous conclusions to which this lack of knowledge of the cultural milieu can lead is clearly shown in Derbyshire's puzzling assertion:

There is reason to suspect that the existence of disease . . . is higher among lower class minorities than in the general population [disease clearly includes mental disease] (8, p. 68).

What is his reason for suspecting this?

Data from one Baltimore study indicate that Negroes utilize psychiatric facilities less than do whites [emphasis mine]. . . . Lower class value orientations . . .

parochial attitudes, ethnic pride and independence, lack of . . . education and psychological sophistication . . . *all interact to prevent the early labelling and treatment* [emphasis mine] of the mentally ill [among poor minorities] (8, p. 68).

Derbyshire surmises that mental illness is *more* frequent among the poor because he presumes it is *less* frequently diagnosed!

Much personality research among minority peoples, including black Americans, has been based primarily on questionnaires, psychological tests, and other shorthand approaches to consciousness which purport to show that the frequencies of given "traits" vary between blacks and whites. These conclusions have often stemmed from the exclusive use of some single psychometric device. Several problems arising from such an approach can be illustrated by references to two typical studies.

Mussen (21) conducted a study in which he employed the TAT to infer differences in personality trait frequencies between white and black male children. He makes the plausible claim that "there will be consistent differences between the fantasy productions of individuals who belong to or have been socialized in different social groups. Thus a certain amount of variation in any TAT production can be accounted for by the fact that the individual has grown up in a given milieu . . ." (21, p. 373). Possibly; but given "cultural differences," we can reasonably expect that the rules of correspondence that link the manifest narrative content of fantasy projections with underlying "deep" meaning would be markedly *different* between two groups. This implies that very *different* TAT responses could indicate that two individuals from two different groups have in fact very *similar* conscious or unconscious lives. The meaning of any utterance or narrative lies in part in the conditions of knowledge, belief, and intention of the speaker. If this is not known, one cannot possibly interpret the meaning of narratives or utterances of any kind, including those elicited using psychological tests. This criticism of early work utilizing projective tests cross-culturally or cross-social class is not new. Mussen undoubtedly is fully aware of this limitation of his and others early work. Yet the results of these early studies have not been critically appraised. In part, this has permitted the findings to enter the popular consciousness as "truths," or at least as unquestioned, authoritative opinion.

Mussen lists the results (of the response differences) in terms of rules of interpretation from the TAT Handbook and concludes from these differences the qualities of consciousness or personality of the testees. For example:

the [black] minority group sees the environment as more hostile than does the white majority group. Feelings of rejection generally by the mother . . . are less

frequent in the stories of Negro than of the white boys. . . . The Negro's view of the environment as essentially inhospitable . . . is further reflected in the finding that a relatively small number of these subjects see themselves as establishing and maintaining friendly relations, respecting others, or being kind and considerate to others . . . (21, p. 375).

It may be true that black people see the environment as hostile. From my viewpoint their environment certainly is hostile. But I do not know why black children would see the possibility of establishing friendly relations as an illusive goal. Mussen cites no independent evidence to substantiate his claims.

Rosen (24) undertook a study in which he attempts to demonstrate that "the disparity between the vertical mobility rates of some racial and ethnic groups can, in part, be explained as a function of their dissimilar psychological and cultural orientations toward achievement. . . . Achievement motivation, achievement values, and educational-occupational aspirations . . . have important implications for social mobility in this country . . ." (24, p. 47). Verification of this claim raises a thorny issue: the mobility has already occurred, the past is not accessible through ethnographic or psychological study directly, the Ss studied could have acquired those "achievement orientations" after their mobility, during, or before it. Rosen insists that despite numerous other plausible explanations for mobility differentials among ethnic groups (for example, discrimination and "ethnic skills"), these "explanations" overlook one important factor: the individual's psychological and cultural orientation toward achievement (24, p. 48). Rosen uses a scale to determine the social position of the families sampled. A projective test consisting of four pictorial protocols plus an interview on achievement orientation measures "orientation toward achievement." The results showed—predictably—that successful people are success oriented, and that not-successful are not so oriented. Rosen states that the latter is a partial cause of the former, and that Negroes, irrespective of social class, have low achievement orientation compared to other population groupings (24, pp. 49, 60).

Quite apart from the methodologic problems in Rosen's study, his findings and his methods serve directly the vested interests of the social classes which sponsor this kind of research. It is convenient, even guilt-assuaging, to believe that one's own success and the failure of others are both due to qualities of personality and conduct. In a society, such as the American, with its gross institutional differentials in the allocation of resources and rewards, we should be quite wary of research which ignores

these social realities or strives to minimize their importance, in attempts to vaunt "personality" differences as an explanation for differentials in social mobility.

D. CONCLUSIONS

The thesis of the scars-of-bondage literature has in no sense been corroborated. That rigidly structured social inequality necessarily or with high probability produces deep and lasting psychic disabilities among S peoples remains a dubious hypothesis.

Such a "blame the victim" framework, while perhaps pointing out the suffering black Americans have undergone, diverts attention from the underlying problem: society's institutions. No amount of social case work or social psychiatry directed to the victims of discrimination can remedy the cause of the problem, which is not the alleged psychic scars, but the structured economic and social inequality and discrimination built into the fabric of the society itself.

There is, however, ample reason to inquire into the effects of structured social and economic inequality on the peoples who are the victims of such systems. That the literature to date has not demonstrated the scars-of-bondage thesis to be valid does not suggest that there have been no effects whatever. Indeed, if there are psychological consequences of inequality, exploitation, and discrimination, we should know as much as possible about them. Past research, as suggested, cannot in general serve as a background or framework for a redesigned program of inquiry. Rather a new beginning should be made.

There are at least three necessary kinds of inquiry and knowledge upon which a redesigned psychological assessment must be based: (a) Valid knowledge must be gained of the social and cultural structure of the communities within which various black people live and of how various strata and cohorts of the black population are articulated to those community structures. The pathbreaking work of Hannerz (12), Liebow (16), Stack (25), and Valentine (28) could serve as a beginning for the establishment of a sociocultural baseline. (b) Valid knowledge must be gained concerning how this material world is invested with meaning by its black constituents, including most importantly the ways in which this meaning of the life-world is represented in language and language use. Language and meaning are the principal vehicles for almost every kind of psychological assessment. How the varieties of "black experience" have been represented and, indeed, sedimented, in language forms (e.g., aphorism, banter,

humor, oral traditions, slang, cant, etc.) are crucial to any assessment of the impact of the circumambient society on the growth and development of personality. The work of Labov (15) and Dillard (9) are directly pertinent here. (c) Psychology and psychiatry must overcome the institutional barriers which separate the academy and the healing arts from black people. The university, the clinic, the private practice cannot serve as entry points to the black world either statistically (as a base for sampling) or experientially (they are often hated, selectively utilized, shunned, etc.). Coles (5) has benefitted immensely from his psychiatric reconnaissances which have been conducted in black communities of the American Southeast. There he has encountered people "on their turf," and in the plenum of actual, ongoing life. Psychological assessments uninformed by this kind of close holistic inquiry will have diminished validity and significance. Further, cross-cultural research carried out on other minorities within the United States or in other kinds of colonial contexts will undoubtedly help to distinguish the necessary from the contingent in assessment of personality effects traced to structured inequality. Work by Alverson (2) on the Tswana of Southern Africa has been carried out with this goal in mind. Finally, a greater appreciation of the relationship between the material world of victim peoples and the meanings they bestow on the world and on themselves can best be achieved by a behavioral science that is theoretically informed by a phenomenology of perception and of action. The plausibility of the scars-of-bondage thesis has derived in part from an antihistorical and radically behavioristic view of personality and consciousness. On this view, overt behavioral experience is presumed to create an interior "psychic" disposition or trait. Mind is deemed to be an interior representation of overt behavior, no more and no less. This conception of mind or consciousness makes an utter mystery out of what is otherwise quite understandable: that the power of mind or consciousness to make meaning in the world—to define one's identity—can operate even in a manacled body. This "freedom" of consciousness to transcend—overcome—the oppression of the body is the key resource an oppressed people can employ to throw off both the yoke and the thought-patterns of their oppressors.

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MUTUAL EYE CONTACT AS AFFECTED BY SEATING POSITION, SEX, AND AGE*

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SUMMARY

The effect upon mutual eye contact of two seating positions (opposite and beside), sex of pairs (male-male, female-female, and male-female), and three divisions of adult age (young, middle, and senior) was examined by observing 116 pairs of white adults who frequented four shopping centers in the metropolitan area of a Midwestern American city. The results showed that pairs seated opposite each other had significantly more mutual eye contact than pairs seated adjacent to each other. Young and senior adults engaged in significantly more mutual eye contact than did middle age adults. Significant interactions were obtained for sex of pairs and age, and for seating position, sex, and age.

A. INTRODUCTION

Although novelists, poets, philosophers, and countless others have recognized the importance of mutual eye contact in human behavior, it was not until the 1960s that psychologists began investigating this phenomenon. In the last 15 years the quantity of research dealing with mutual gaze has expanded rapidly. The research has been reviewed by Feline (7), Argyle and Cook (1), and Knapp (8). The review of the literature refers to studies carried out in Western cultures, and the research presented here may be American bound.

Mutual gaze refers to a situation in which two interacting individuals are looking at each other in the region of the face. It signifies that they are paying attention to each other and is generally necessary for interaction to

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begin and be sustained. Mutual gaze also seems to imply access or meeting of the minds and may signify a particular kind of intimacy.

The current study examines the way in which three factors, position, age, and sex, affect the amount of mutual gaze between two interacting persons.

Seating position arrangements have important consequences for social interaction. Most studies have examined the conditions under which a particular seating arrangement will be chosen: i.e., seating position has served as the dependent variable. For example, leaders and dominant personalities tend to position themselves at the head of a table (13, 11); students engaging in conversation or competition would be expected to sit opposite one another, but students engaging in cooperation would be expected to sit side-by-side (12); and extroverts generally chose sitting positions which place them close to others, while introverts choose more distant positions (4). Few studies have tested seating position as an independent variable, and thus the influence of seating position on social behavior has tended to be neglected. An exception is the study by Mehra-bian and Diamond (10), who found that when individuals were seated side-by-side they engaged in less conversation than when they were seated opposite each other. It would be anticipated that eye contact also would be affected by seating arrangements.

Aside from infancy, few investigations have been concerned with relating mutual gaze and age. An exception is the study by Levine and Sutton-Smith (9) who found that mutual gaze was relatively high during childhood, decreased slightly during adolescence, and increased to the highest level in adulthood. Adulthood, however, was treated as one category, and no distinction was made between young, middle-age, or senior adults. Brown (3) discusses the possibility that the elderly, in preparation for death, begin to disengage from society and undergo a decrease in positive responsiveness to others. This would imply that senior adults would engage in less mutual eye contact, but this hypothesis has not been tested experimentally.

With regard to sex, female dyads have been shown to engage in more mutual gaze than male or mixed dyads (9). However, several studies have reported that the amount of mutual gaze depends on the interaction between sex and situations. For example, Argyle and Ingham (2) found that males increased gazing as the distance increased while talking to females, but this relationship did not hold when the males were listening.

B. METHOD

1. *Subjects*

Two hundred and sixteen pairs of white adults who frequented four shopping centers in the metropolitan area of Kansas City served as Ss. One third were estimated as young (18-30), one third as middle age (31-55), and one third as senior (56 and above). Each age group had an equal number of male and female Ss.

2. *Independent Variables*

A $2 \times 3 \times 3$ experimental design was used, the three factors being position, age, and sex of the pairs.

Two seating positions were observed. In one half the Ss were seated beside each other and in the other they were seated opposite each other. The malls of the shopping centers have benches and the side-by-side pairs were observed in that area. The pairs opposite each other were observed in the shopping center restaurants where square tables are in use.

Three adult age groups were observed, young, middle-age, and senior. Pairs were selected only if both members were in the same age categories and appeared to know each other. This was determined by noting that the pairs approached and left the benches together, and sat close to each other. Individuals knowing each other, of course, were more likely to be the case for pairs in the restaurants than for pairs observed seated in the malls. However, it was not possible to take measures to insure that the degree of friendship or liking for one another was equated for the pairs in the restaurants and malls. The assumption was made that in both settings these factors were distributed randomly. Two raters independently categorized the ages of 13 pairs and obtained substantially similar results ($r = .96, p < .01$).

Three different sex pairs were observed: male-male, female-female, and male-female.

3. *Dependent Variable*

The observations were made between noon and 7:00 p.m. on all days of the week over a period of two months by a confederate (C) who positioned herself approximately 15 feet from the Ss. Mutual eye contact for each pair was measured with the use of a stopwatch. Three 15-second observations were made over a five-minute interval for each pair, with the observations

spaced at the beginning, midpoint, and end of the five-minute interval. The total number of seconds of mutual gazing for each pair was averaged over the three observations. Two Cs independently observed the mutual gazing of 18 pairs and obtained highly reliable scores ($r = .96$, $p < .01$). Observations were not conducted when the pairs communicated with a third party. In the restaurants, timing sessions were not begun until the Ss had completed the ordering of their meals.

C. RESULTS

The mutual eye contact mean scores in seconds were analyzed using a $2 \times 3 \times 3$ analysis of variance test. The mean for mutual gazing when the pairs were seated opposite each other ($M = 2.82$) was significantly greater than the mutual gazing mean ($M = 1.20$) when the pairs were seated beside each other [$F(1, 198) = 16.62$, $p < .001$]. The mutual gazing means for the young ($M = 2.44$), middle-age ($M = 1.23$), and senior adults ($M = 2.36$) were significantly different [$F(2, 198) = 3.89$, $p < .025$].

A significant interaction was obtained for sex of pair and age [$F(4, 198) = 4.24$, $p < .01$]. For the young adults, the male-male pairs had low ($M = 1.41$) and the male-female pairs had high ($M = 3.32$) mutual eye contact mean scores ($p < .05$); for the senior adults, the male-male pairs had high ($M = 3.70$) and the male-female pairs had low ($M = .99$) mutual eye contact mean scores ($p < .01$); for the young and senior adults the female-female pairs had similar ($M = 2.60$, $M = 2.39$, respectively) mutual eye contact mean scores; and for the middle-age adults, the male-male and female-female pairs had similar ($M = 1.80$, $M = 1.72$, respectively), while the male-female pairs had low ($M = .16$) mutual eye contact mean scores ($p < .05$).

A second order interaction for seating position, sex, and age was also significant [$F(4, 198) = 2.52$, $p < .05$]. For the senior adults when seated adjacent to each other, there was little change in mutual gaze for the male-male, female-female, and male-female pairs; but when seated opposite the male-male pairs had high and the male-female pairs had low mutual eye contact. For the young adults, only when the male-female pairs were seated opposite to each other was there a high level of mutual eye contact. Thus different patterns of mutual eye contact across the sex combination pairs for the senior and young adults became evident only when pairs were seated opposite each other.

The factor for sex pairs and the other interactions were nonsignificant.

D. DISCUSSION

The present study has shown that mutual eye contact was twice as great when two individuals sat opposite rather than beside each other, and that young and senior adults engaged in double the eye contact when compared to middle age adults.

Research by Exline (5) and Exline and Winters (7) reported that pairs of female college students engaged in more mutual eye contact than pairs of male students. If it can be assumed that college students would fall in the young adult category, the data from the present study also supported this finding. However, in the middle-age pairs it was found that male and female pairs showed similar amounts of mutual eye contact and in the senior age pairs, the young adult pattern was reversed, with males engaging in greater mutual eye contact than females. It would appear that the adult category should be subdivided into young, middle, and senior groups. Results obtained with a young adult sample may not be applicable to middle or senior adults.

Mutual eye contact for male and female pairs also varied depending on the age divisions. Male-female pairs in the young adult group exhibited approximately twice the amount of mutual eye contact than did the middle or senior age male-female pairs.

The significant second-order interaction indicates that high levels of mutual eye contact depended on specific combinations of three factors. For senior adults the highest levels of mutual eye contact was obtained when male-male pairs were seated across from each other, while for young adults the highest levels were obtained when male-female pairs were seated across from each other.

The lowest level of mutual eye contact was obtained for middle-age, male-female pairs when they were seated beside and for senior and middle, male and female pairs when they were seated opposite each other.

Using seconds, a continuous measure, for assessing the amount of mutual gazing may present a difficulty. Psychologically the difference between gazing for some period of time and not gazing at all may be very significant. However, it would be highly difficult to determine what score to allot to pairs who engage in no mutual gazing other than zero. The study was not designed to deal with this problem.

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SOCIAL EPISODES AND PERSON PERCEPTION THE FLUCTUATING STRUCTURE OF AN ACADEMIC GROUP¹

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SUMMARY

The effects of different social episodes on interpersonal perception were studied in a well-established academic group consisting of male and female faculty members, research students, and staff. Group members ($N = 16$) were asked to rate one another on a number of personality dimensions in each of four social episodes commonly occurring in their social milieu. The relevance of the rating scales used for each of the episodes was previously established in a pilot study. Interpersonal judgments were analyzed by (a) a multidimensional scaling technique, and (b) by subsequent discriminant analyses of the group spaces. Results indicated that (a) the traits used were different in the four episodes, (b) the number of dimensions used varied with the episode, (c) the status of group members was differentially relevant in different episodes, and (d) status groups differed in their perceptions of the group structure in each of the four episodes. The importance of situational variables in social perception was discussed, and the role of different social episodes in defining and structuring our view of the social world was considered.

A. INTRODUCTION

Increasing attention has been paid in recent years to the role different social episodes play in defining and structuring the social world. While in sociology (19) and in social anthropology (10) the important function of social situations as crucial units of social experience has long been recog-

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nized, psychologists, with the exception of those working within the symbolic interactionist tradition (18), have not been explicitly concerned with the role episodes and situations play in structuring our perceptions. The continuing controversy in personality psychology concerning personal versus situational consistencies in behavior (5, 6, 12) has highlighted the neglect with which psychologists have treated situational variables in the past. There is now a unison of belated calls for the study of situational effects on behavior and on perception and cognition (2, 5, 9, 14).

The consequences for social psychology can be far-reaching. If trait conceptions are basically misguided, as these recent critiques suggest, the implications for other areas of psychology where trait models have been used should receive serious attention" assert Argyle and Little (1, p. 1). Indeed, there is an implicit belief in social psychology that social behavior and perception are relatively stable, and cross-situationally invariant. The central aim of the present study was to demonstrate that well-defined social episodes within an intact group have a far-reaching function in organizing the social experience and perceptions of the members. We shall attempt to show that group members' perceptions of one another, as well as the perceived structure of the group and the attribute dimensions used to describe it, are not invariant but fluctuate with the episode context.

There are many relevant frameworks and research traditions in social psychology within which the interpersonal perceptions of a small group, such as the academic group studied here, can be treated. The way group members perceive one another and the attribute dimensions they use to represent the group may be said to constitute the effective social structure of the group. In these terms, the group as perceived by its members is analogous to a cognitive domain (17), and the representation of its structure requires the uncovering of these implicitly perceived differences between group members. Jones and Young in their interesting study of the structure of an academic group using precisely these methods argue that "each individual in a social field has an internal representation of the other members in the field, with the individual positioned somewhere in the representation. This is his own personal 'social environment.' We will use the term 'social structure' to refer to this environment" (11, p. 108). Although this approach to the study of social structure proved to be extremely useful, yielding meaningful representations, it is based on the assumption that perceived social structure is something permanent, not affected by the requirements of particular episodes; all other approaches to the study of social structure, including Moreno's (13) sociometric method, share this

implicit assumption. In contrast, the central argument of the present study is that group structure can be expected to be more complex in some situations than in others, and the attribute dimensions relevant to differentiating group members would also depend on the requirements of the situation.

An alternative way of conceptualizing interpersonal perception processes within a small intact group is in terms of the judges' implicit theories of personality. Rosenberg and his co-workers (15, 16) have repeatedly argued that "the perception of stable physical and physiological characteristics and the beliefs about their co-occurrences are important objects of research for social psychologists. The trait elements and relations a person perceives are frequently referred to by psychologists as the person's implicit personality theory" (15, p. 236). Again this theory is based on the implicit assumption of cross-situational consistency: the same people are expected to be described in the same way, irrespective of the particular situational context involved. When interpersonal perceptions within a group are represented in a number of different situations, the validity of this assumption can also be empirically evaluated.

In summary, the aim of the present study was to demonstrate that person perception is situation specific, and judgments of people depend not only on the relatively invariant characteristics of the persons to be judged, but also on the more volatile attributes of the episode context. It was hypothesized that both the complexity of the social structure (the number of dimensions necessary to represent the group) and the nature of the underlying attribute dimensions would vary with the episode specified. Further, it was expected that the group structure in the different episodes would differentially reflect formal, *a priori* status differences between faculty, staff, and students. Finally, it was hypothesized that group members would be differentially sensitive to these cross-situational differences: for example, faculty, research students, and staff would have systemically different ways of reacting to the episode contexts.

B. METHOD

1. Overview

The general approach was to derive a representation of the group as seen by its members in each of four episodes. In addition, a joint analysis of the group structure based on all four episodes was undertaken, in order to evaluate statistically the differences between the four episodes in their contribution to this joint, hypothetical group structure.

The principal data analytic method used, as in many current studies of social perception, was a multidimensional scaling (MDS) technique—specifically, Carroll and Chang's (3) Individual Differences Multidimensional Scaling (INDSCAL) model.

The INDSCAL model assumes that a set of attribute dimensions underlie the perception of a sample of stimulus objects, and that these dimensions are differentially relevant (salient) to different individuals. The model uses the variation among input (dis) similarity matrices, each representing judgments from an *S* or from a particular rating scale, to determine a unique group stimulus space. The axes of this stimulus space "will correspond to meaningful psychological dimensions in a very strong sense" (3, p. 285), and are directly interpretable without further rotation. In addition to constructing a group stimulus space, the program also calculates a set of dimension weights, each indicating the salience of an INDSCAL dimension to a particular individual.

2. *Subjects*

Members of a subsection of a large psychology department at a British University ($N = 16$) were both the subjects and the objects of this study. The group included both males and females and consisted of five faculty members, three first-year research students, six advanced research students, and two other staff; all group members had offices in a clearly demarcated area of the department. This group was a cohesive and well-established social unit, with its members in regular contact with one another, both inside and outside the department, for at least six months prior to the study.

3. *Selection of the Situations*

The selection of the social episodes (in effect, the independent variables) to be studied was crucial: ideally, they should be both representative of the normal social interaction patterns of the group and maximally different in their characteristics and requirements. In deciding which of the group's numerous social episodes would provide the most appropriate and heterogeneous contexts for person perception judgments, the present investigators used as empirical guidelines data obtained from a previous study by Forgas (8). In that study, MDS procedures were used to represent group members' perceptions of a representative sample of their commonly occurring social episodes. From this empirically derived "episode space," four episodes were selected such that (a) they were maximally different from one

another, and (b) included both work and nonwork, superficial, and more involved situations. The four episodes selected were the following:

1. Having a drink together in the pub on a Friday night, after the regular weekly seminars ("pub").
2. Having morning coffee with other group members in the department ("morning coffee").
3. Being a guest at a faculty member's house for drinks ("party").
4. Participating in one of the research seminars, with only group members being present ("seminar").

4. *Pilot Study*

The input to MDS can be either direct similarity ratings between the stimuli, or similarity matrices derived indirectly from other data, such as bipolar scale ratings. This latter method was used here, since the use of bipolar scales allows a simplified interpretation of the MDS configuration. Because the inappropriate selection of bipolar scales may, even after transformation into similarities data, influence the results, a pilot study was conducted in which the situation-, object-, and subject-relevance of the scales used was established. In a questionnaire combining a checklist procedure and open-ended accounts, group members were asked to (a) rank in order of importance 10 out of 54 bipolar personality dimensions, selected from the literature, which would best differentiate group members in a particular episode; and (b) indicate other relevant qualities and attributes, not included in the checklist, which they considered important. The 10 most salient and relevant personality dimensions for each episode were determined with frequency of nomination, rank order of importance, and frequency of open ended nomination as the most important criteria (Table 1).

5. *Materials and Procedure*

A questionnaire was constructed, containing all instructions in a written form, and asking Ss to rate every member of the group, including themselves, on the 10 scales in each of the four selected situations. The order of scales, situations, and group members was randomly varied throughout in order to avoid response set and series effects. The questionnaires were distributed to group members, who were asked to return them to a designated collection box. The complete anonymity of respondents was emphasized throughout, and returned questionnaires were processed and coded by a specially hired outside research assistant, who removed names

and all other identification from the completed questionnaires. Only the status category of the respondent was preserved and coded (faculty member, first year research student, advanced research student, and other staff).

6. Analysis

In order to transform the data collected in the form of bipolar scale ratings into dissimilarity matrices acceptable to the INDSCAL program, a profile distance formula suggested by Wish, Deutsch, and Kaplan (20) and others was used. In this formula, the dissimilarity δ_{ij} between group members i and j on scale s is defined as

$$\delta_{ij}(s) = \sqrt{\frac{1}{N} \sum_{k=1}^N (X_{iks} - X_{jks})^2}$$

where N is the total number of respondents, X_{iks} and X_{jks} are subject k ratings of group members i and j on scale s . On the basis of this formula, separate dissimilarity matrices were obtained for each respondent, and each bipolar scale for each of the four episodes. In total, 26 dissimilarity matrices for each situation were obtained, 16 representing individual judges, and 10 representing bipolar scales.

C. RESULTS

In order to assess the extent of cross-sectional differences in perception, separate analyses for each of the four situations were performed first, followed by a joint analysis of data from all situations.

1. *The Perceived Structure of the Group in Each of Four Situations*

In the first instance, four separate INDSCAL analyses, each based on 26 dissimilarity matrices as input, were carried out.

a. Dimensionality. The number of dimensions necessary and sufficient adequately to represent the perceived group structure in each episode was empirically determined, by selecting the number of dimensions after which no notable improvement in the variance accounted for could be achieved by the addition of further dimensions. Thus, two dimensions, accounting for 66 and 69 percent of the variance, were necessary to represent the group in episodes 1 and 2 (pub and morning coffee), while a more complex, three-dimensional representation was necessary to represent the group in situations 3 and 4 (party and seminar), accounting for 72 and 70 percent of the variance, respectively. The structure and complexity of intragroup

perception was thus found to be episode specific: situations 1 and 2 appeared to call for less complex representations than situations 3 and 4.

b. *Interpretation of the group structure in each of four episodes.* The interpretation of INDSCAL configurations essentially consists of the identification or labelling of the unrotated axes defining the stimulus space. In the present case, dimension weights for bipolar scales, analogous to partial correlation coefficients, directly indicate the relevance of known attribute dimensions to the labelling of INDSCAL axes. A summary of dimension weights for every dimension of each of the four situations is given in Table 1. According to this analysis, not only the complexity, but also the quality of the perceived relationships between group members varied with the episode. In episode 1 (in the pub), something like interpersonal *evaluation* in the sense of being an enjoyable companion, and *extroversion* were seen as the relevant attributes. In the second episode (morning coffee) a more intellectual *evaluative* dimension and a *self-confidence* dimension differentiated group members best. In the third episode, being a guest at a party given by a faculty member, *self-confidence*, interpersonal *warmth*, and *ingratiation* were apparently the most pertinent perceived qualities. Finally, in the most work-oriented situation, participating in a research seminar (episode 4), *dominance*, *creativity*, and *supportiveness* were the most salient personality characteristics as seen by the group as a whole. For the exact interpretation of these dimension labels refer to Table 1. These results clearly indicate that both the complexity and the quality of the attribute dimensions underlying the group structure were apparently episode specific.

c. *Perceived status differences in each of the four situations.* It was also hypothesized that the perceived differences between such status groups as faculty, students, and staff may be more relevant in some situations than in others. An empirical test of these differences would require an evaluation of the differences between the structural positions of these subgroups in each of the situations. A series of multiple discriminant analyses were carried out, one for each episode: a group member's position within the group as indicated by his co-ordinates in the group space were the input variables, on the basis of which the program categorized the individual as belonging to one or the other of the *a priori* status groups (Table 2). These results indicate that a *a priori* status was perceived as most important in the research seminar episode followed by the party at a faculty member's house episode, whereas in the pub and at morning coffee status differences were not strongly reflected in the group structure.

TABLE 1
SUMMARY TABLE OF DIMENSION WEIGHTS^a FOR BIPOLAR SCALES

Scale	Dimension 1	Dimension 2	Dimension 3	R ^b
Situation 1: In the Pub				
Self-confident/shy	Evaluative	Extroversion		
Self-confident/shy	.682	.390		.921
Talkative/silent	.665	.395		.908
Interesting/boring	.731 ^a	.318		.915
Tense/relaxed	.425	.511		.794
Humorous/humourless	.868 ^a	.107		.919
Warm/cold	.667	.204		.803
Friendly/unfriendly	.771 ^a	.005		.773
Generous/stingy	.671	.211		.786
Reserved/disclosing	.242	.764 ^a		.838
Drinks a lot/drinks little	.037	.709 ^a		.814
Situation 2: Morning coffee				
Self-confident/shy	Evaluative	Self-confidence		
Self-confident/shy	-.089	.756 ^a		.717
Talkative/silent	.827 ^a	.176		.926
Interesting/boring	.834 ^a	.155		.919
Tense/relaxed	.182	.761 ^a		.865
Humorous/humourless	.538	.548		.937
Warm/cold	.009	.763 ^a		.768
Introverted/extroverted	.563	.506		.923
Annoying/pleasant	.869 ^a	.186		.974
Slow/quick	.868 ^a	.155		.954
Intelligent/dull	.557	.395		.826
Situation 3: Party				
Self-confident/shy	Self-confidence	Warmth	Ingratiation	
Self-confident/shy	.796 ^a	.174	.167	.973
Talkative/silent	.729 ^a	.196	.184	.962
Interesting/boring	.373	.549	.191	.927
Tense/relaxed	.312	.507	.201	.844
Humorous/humourless	.619	.425	.096	.977
Warm/cold	.004	.791	.238	.917
Reserved/disclosing	.204	.447	.272	.756
Poised/awkward	.334	.195	.519	.867
Articulate/inarticulate	.774 ^a	-.023	.295	.948
Ingratiating/not ingrating	-.046	-.140	.759 ^a	.694
Situation 4: Research seminars				
Self-confident/shy	Dominance	Creativity	Supportiveness	
Self-confident/shy	.718 ^a	.336	.011	.955
Talkative/silent	.713 ^a	.289	.169	.945
Interesting/boring	.434	.532	.025	.363
Annoying/pleasant	.035	.073	.743 ^a	.758
Intelligent/dull	.629	.376	.013	.902
Articulate/inarticulate	.522	.499	-.028	.906
Critical/supportive	-.017	.055	.835 ^a	.899
Creative/uncreative	.254	.754 ^a	-.004	.924
Dominant/submissive	.771 ^a	.300	.108	.925
Patient/impatient	.325	.129	.719 ^a	.841

^a Dimension weights > .7, used in labelling Individual Differences Multidimensional Scaling [INDSCAL (3)] dimensions.

^b R = Multiple correlation coefficient.

TABLE 2
SUMMARY OF MULTIPLE DISCRIMINANT ANALYSES OF STIMULUS WEIGHTS AND SUBJECT WEIGHTS
FOR A *Priori* STATUS GROUPS

A Priori groups	Mean dimension weights			Discriminant function coefficients			Classified Δ_2^2 ^b			p
	Dim. 1	Dim. 2	Dim. 3	Dim. 1	Dim. 2	Dim. 3	1	2	3	df
I. Stimulus weights										
Situation 1: In the pub ^c										
1. Research students (N = 9)	.066	.016	—	2.44	1.90	—	5	2	—	2 NS
2. Faculty and staff (N = 7)	-.085	-.022	—	-3.17	-2.49	—	3	6	—	1
Situation 2: Morning coffee ^c										
1. Research students (N = 9)	-.087	.017	—	-2.70	-1.59	—	7	2	—	2 NS
2. Faculty and staff (N = 7)	.112	-.021	—	3.47	2.04	—	1	6	—	1
Situation 3: Party										
1. First year research students (N = 3)	-.296	.198	.253	-18.41	-2.11	7.04	2	1	0	1
2. Advanced research students (N = 6)	-.012	-.041	-.055	-0.55	-0.24	-0.75	1	4	1	6 .001
3. Faculty and staff (N = 7)	.267	-.051	-.050	15.97	-2.17	-3.38	0	1	6	1
Situation 4: Seminar										
1. First year research students (N = 3)	-.299	.105	.016	-17.69	-8.94	-3.06	3	0	0	1
2. Advanced research students (N = 6)	-.021	.026	-.019	-0.64	-0.09	-0.48	0	5	1	6 .005
3. Faculty and staff (N = 7)	.146	-.067	.009	8.14	3.76	1.72	0	2	5	1
II. Subject weights										
Situation 1: In the pub										
1. Research students (N = 9)	.460	.368	—	13.77	16.03	—	7	2	2 64	2 NS
2. Faculty and staff (N = 7)	.644	.703	—	15.12	13.53	—	3	4	—	1

TABLE 2 (Continued)

A Priori groups	Mean dimension weights			Discriminant function coefficients			Classified as ^a		
	Dim. 1	Dim. 2	Dim. 3	Dim. 1	Dim. 2	Dim. 3	1	2	3
Situation 2: Morning coffee									
1. Research students ($N = 9$)	.401	.405	—	24.73	23.21	—	8	1	—
2. Faculty and staff ($N = 7$)	.693	.169	—	29.32	19.69	—	2	5	—
Situation 3: Party									
1. First year research students ($N = 3$)	.212	.400	.159	33.25	28.75	19.40	1	2	0
2. Advanced research students ($N = 6$)	.361	.357	.261	44.82	33.70	33.16	1	4	1
3. Faculty and staff ($N = 7$)	.559	.125	.278	50.35	29.84	37.95	0	1	6
Situation 4: Seminar									
1. First year research students ($N = 3$)	.354	.240	.249	17.12	13.17	19.40	1	1	1
2. Advanced research students ($N = 6$)	.220	.502	.353	19.06	17.49	26.10	0	5	1
3. Faculty and staff ($N = 7$)	.611	.210	.160	23.49	16.73	16.82	0	2	5

^a Classification of group members into one of the *a priori* groups in terms of their dimension weights

^b Mahalanobis D^2 ; significant values of this statistic can be tested against the χ^2 distribution.

^c Because the number of groups cannot exceed the number of differentiating variables (dimensions), *a priori* groups had to be merged for the purposes of this analysis.

d. *Subject differences in the perception of group structure.* Not only were members of different subgroups expected to occupy different relative positions in each of the four episodes, but it was also hypothesized that as judges their perceptions of the group would be differentially affected by the episode context. A statistical test of this hypothesis was carried out, again with use of a multiple discriminant procedure. In the INDSCAL model, a judge's dimension weights in the subject space indicate the saliencies of the different INDSCAL stimulus dimensions to that particular individual—in other words his perceptual style relative to the other judges. These subject dimension weights were used as input variables and the program categorized individual judges as belonging to one of the status subgroups on the basis of their subject weights. The results for each of the four situations were presented in Table 2, section II. It appears that there was greatest agreement in judgments of the group in the pub episode; in the research seminar episode, students found the third dimension (*supportiveness*) much more salient than faculty members. In the morning coffee situation, the *evaluative* dimension was relatively more salient to faculty and staff, while the *self-confidence* dimension was more relevant to students in their judgments. Differences in perception were most marked in the party situation: while self-confidence was seen as the most important dimension overall, first-year research students also emphasized *warmth*, and both advanced research students and faculty judged ingratiation to be a salient dimension (Figure 1). These relative perceptual differences between *a priori* status groups will be further elaborated in the discussion.

2. Joint Analysis of Data from Four Episodes

The above separate analyses of the perceived group structure in each of the four episodes suggest that intragroup perception was indeed episode specific. A more demanding test of the contribution of the episode context to person perception judgements is a direct comparison of subject weights from the four episodes.

A final INDSCAL analysis, using the 16 subject matrices from each of the four situations was thus carried out. The three-dimensional configuration, accounting for 74 percent of the variance, was found to be both necessary and sufficient to represent the group adequately as seen by a hypothetical "average" member in the four episodes. The 16 subject matrices from each episode were treated as constituting four separate groups of input data, and the significance of the differences between these groups was evaluated by a multiple discriminant analysis, with subject dimension

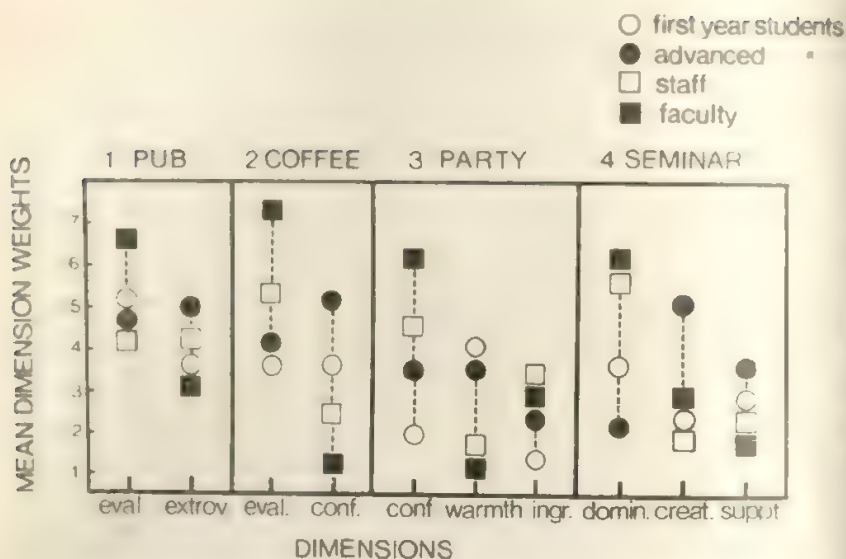


FIGURE 1

DIFFERENCES BETWEEN FORMAL STATUS SUBGROUPS (FACULTY, STUDENTS AND STAFF) IN THEIR PERCEPTIONS OF THE GROUP IN EACH OF FOUR SOCIAL EPISODES

weights as the differentiating variables. The program correctly identified the episode context for 34 out of the total of 64 subject matrices on the basis of differences in the subject dimension weights. The overall differences between the centroids of the data blocks for the four episodes were also highly significant (Mahalanobis $D^2 = 143.85$; $df = 12$; $p < .001$), indicating that ratings of the group by the same judge in four different episodes could be significantly distinguished on the basis of the episode context alone. This final analysis provides further statistical evidence for direct episode effects on social perception judgments.

D. DISCUSSION

The present study was successful in demonstrating that interpersonal judgments even within a permanent and well established group are strongly and nonobviously affected by the nature of the episode specified. The results of the pilot study had also shown that the relevance of given personality dimensions to describe well-known and familiar others is a function of the social episode.

The first interesting finding was that different numbers of attribute dimensions were necessary to represent adequately the group in different episodes. The first two episodes, going to the pub after a seminar and having morning coffee in the department, are obviously fairly regular, easygoing, and simple episodes mostly socioemotional rather than task-oriented in character, two dimensions in each case were sufficient to represent most of the perceived differences between group members in these situations. Being invited to a faculty member's house for drinks and participating in a seminar were clearly seen as more complex and involved activities calling for a most complex, and multifaceted representation of the relevant characteristics of group members.

Beyond these intuitively meaningful differences in structural complexity, the identity of the underlying attribute dimensions is of particular importance. In the two "simple" episodes, the pub and coffee time, the major dimension differentiating group members was evaluative. Even within this category (see Table 1), however, the pub situation seemed to call for evaluation in terms of interpersonal qualities (being interesting, humorous, and friendly), while the morning coffee situation called for evaluation in terms of intellectual as well as personal qualities (being talkative, interesting, pleasant, and quick). The second dimension in the pub was a fairly straightforward extroversion dimension, while in the more demanding morning coffee situation self-confidence, tenseness, and warmth were seen as important. In the two more complex episodes, the differentiating dimensions appeared to be more idiosyncratic and situation specific. At a party at a faculty member's house, self-confidence, warmth, and ingratiation were seen as the three most salient personal characteristics. The latter dimension, surprisingly, was most salient to faculty members, indicating that they evaluated this episode in terms of how others behave in it. In the research seminar situation, which was seen by many group members as a highly competitive and demanding episode involving a fair amount of exposure to criticism, self-confidence, creativity, and supportiveness were seen as relevant.

These dimensions, derived in the context of specified episodes, may be compared with dimensions constructed without the specification of the situation. Jones and Young (11) found that political persuasion, research interests, and status were the three dimensions best describing the academic group they studied. Further, these dimensions were found to be rather stable over time and not affected by minor changes in group membership. All three dimensions reported by these authors refer to rather

abstract, enduring, permanent characteristics of the members. They do not describe personal characteristics directly relevant to everyday reasoning and behavior within the group. The same point can be made about Davidson and Jones' (4) comparable study. It appears that interpersonal judgments made in a contextual vacuum may be qualitatively different from judgments based on experience in a specified episode. If these differences could be reliably replicated in a wider population, it would strongly suggest that the lack of predictive validity of much research in social perception may be at least partly due to the investigators' failure to specify the relevant episode context.

The differences between the different *a priori* status groups regarding their positions in each of the four situations are also noteworthy. Superficially, status in an academic setting could be expected to be a most pertinent dimension differentiating individuals (11). This is only true for some episodes, however, according to the present findings. In a research seminar status differences were strongly reflected in the perceived group structure, indicating that in academia, status was primarily supposed to reflect intellectual capability, most relevant to behavior in a task-oriented, work episode. Status was also seen as relatively important in a purely interactive episode, such as a party, if the senior position of the host was specified. Presumably, status differences became relevant in a setting where the status of the host was high, and interaction with him was fairly clearly regulated along status lines; similar purely interactive situations in other settings, without a specified "host," did not bring forth status differences. This is reflected in perceptions of the group in the pub and the morning coffee situation, where *a priori* status differences were of no significance.

The differences between faculty, staff, and students as *judges* were also of some interest. There were no notable differences in judgments of the group in the pub episode. At a seminar, however, students, most likely to be exposed to criticism, judged a critical as against a supportive attitude as of high salience, while faculty and staff perceived self-confidence and dominance as more important. These results tend to support some previous findings by Forgas (7, 8) indicating that the subjective meaning of a particular social episode depends not only on the subcultural background of the *Ss* (7) but also on the particular position of the individual within his reference group (8). Students and faculty differed in their judgments of the group in the morning coffee situation, where evaluation was the more salient dimension for faculty members, and self-confidence was a more

important dimension for students. Also, in the party situation self-confidence and ingratiation were seen as more relevant dimensions by faculty than by students, while warmth was relatively more salient for students in their judgments of the group. In short, although ingratiation may be a relevant *behavior* to low-status individuals, it is more likely to be of interest to high-status people in their judgments of the group.

In summary, the results of this study provide strong support for the hypothesis that interpersonal perception is strongly influenced by the episode context. These findings contradict the tacit assumption of cross-situational invariance and individual consistency employed in most studies in social perception. By recognizing the importance of the social episode and the situation, a more realistic picture of the factors affecting social perception may be gained.

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THE INFORMED CONSENT DILEMMA: AN EMPIRICAL APPROACH*

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SUMMARY

When considering the overall costs and benefits involved in an experiment involving deception, psychologists should estimate empirically whether Ss would consent to participate if they could be informed. A risk-benefit model suggests that Ss elect to participate on the basis of their perception of the stress involved and the benefit derived. Male and female introductory psychology students at Colorado State University ($N = 150$) indicated which of a list of physically and psychologically stressful experimental procedures they would be willing to undergo when they expected one of two levels of personal or societal benefits or when no benefit statement was made. Counter to the model, benefits had no effect on the amount of stress Ss would accept. There were no sex differences for physically stressful procedures. Males showed more tolerance of some psychologically stressful procedures. Correlations between group paper and pencil ratings of stress in another study and the percentage accepting a procedure in this simulated experiment were high.

A. INTRODUCTION

In the ethically ideal research situation, the principle of informed consent is the most important norm governing the relationship of investigator and S (8). In deception experiments, however, the principle of informed consent is by definition abridged. When psychologists are considering deceiving Ss, they are faced with a complicated and difficult decision in which they must weigh their obligation to pursue knowledge against their obligation to protect the Ss' right to dignity and self-determination (5). In an effort to assist psychologists with this balancing of obligations, the American Psychological Association (1) has endorsed what is essentially a cost-benefit

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model. When an experiment is under consideration, the costs to the *S*, to the psychologist, and to the profession must be weighed against the benefits that might accrue to the *S*, the profession, and human welfare. The researcher who concludes that the costs are too great in relation to the proposed benefits is obligated to develop another design or create more stringent safeguards.

When considering the overall costs and benefits involved in a deception procedure, the *E* needs to estimate whether *Ss* would consent to participate if they could be informed. To make such judgments, researchers typically rely on their own impressions or those of other professionals. Baumrind emphasizes the moral tenuousness of this practice, since "that decision to risk his welfare belongs entirely to the patient (*S*) . . ." (3, p. 891), and not to others who can only more or less accurately guess what risks participation may have for individual *Ss*.

While some empirical studies (4, 6, 12) have provided important insights into *Ss*' willingness to participate in various experiments, they have not produced the objective, realistic, and usable appraisals of the acceptability of procedures researchers need. Both the Farr and Seaver and the Berscheid *et al.* work, for example, have employed ratings rather than requiring *Ss* to make a clear-cut decision whether or not they would participate. When Berscheid and her colleagues did examine willingness to take part under a "yes'——no" format, acceptance of procedures was so loosely defined that the percentages reported are probably too low. In both these studies, there is some question about how immediate and compelling the experimental situation was, since the *Ss* role-played and so were not placed in an actual consent position where their choice would have immediate consequences. The Ring *et al.* study avoided these problems by examining the percentage of *Ss* who regretted participating in a replication of Milgram's (10) experiment after they had finished. However, to ask *Ss* afterwards whether they regretted their participation introduces potentially confounding variables not present in the usual *a priori* consent situation. For example, *post hoc* inquiries may be subject to demand characteristics (11) or to the effects of cognitive dissonance (7). This approach is also problematical, since it raises ethical issues to ask *Ss* to undergo a variety of procedures in order to find out how stressful they are.

Sullivan and Deiker (13) suggest that *Ss* use a risk-benefit approach in deciding whether to volunteer for a study. Research on the effects of benefits is important, since psychologists may justify a deception experiment by asserting that individuals will find participating worthwhile. Per-

sonal and societal benefits are especially significant, since a number of authors have suggested that Ss expect to gain personally from participating in research, or to feel the satisfaction of helping others (2, 6, 11). No studies, however, could be found which systematically examined just what benefits are actually valuable to Ss, nor how particular benefits affect the amount of stress Ss find acceptable.

The current study was designed to determine what percentage of Ss would agree to participate in selected procedures when they are informed, prior to the experiment, about the risks and benefits involved. The physically or psychologically stressful procedures used were derived from Farr and Seaver's (6) lists. Their invasion of privacy list could not be used, since it did not lend itself to the experimental procedures. Personal and societal benefits were obtained from a preliminary study. The design allows Ss' consent responses, which are of a "yes-no" nature, to be assessed in a realistic consent situation when they expect either a high or low personal or societal benefit or when no benefit is mentioned.

B. METHOD

1. *Pilot Study To Rate Personal and Societal Benefits*

A list of 80 benefits was created by examining copies of *Psychological Abstracts* for the last eight years. Studies were selected which were of some relevance to college students and whose results appeared to cover a range of importance. The results were translated into statements of benefit. Forty of the benefits were judged to be personal because, to varying degrees, they would increase the knowledge or skills of the individual Ss. Another 40 were judged to be societal because they would primarily affect other people or society as a whole.

The two separate lists were given to 183 introductory psychology students at Colorado State University. They were asked to imagine that they were in an experiment, and then to rate the importance of each personal and societal benefit by using a Likert scale of 1 (not at all important) to 5 (very important).

One personal and one societal benefit were selected such that their mean ratings were high and equivalent and their standard deviations were small and comparable. Two low benefits, one personal and one societal, were chosen in a similar manner. The two high benefits were (a) Personal: learn to speak more forcefully and confidently ($M = 4.35$, $SD = .70$); (b) Societal: devise ways for old people to live more meaningful lives

($M = 4.36$, $SD = .85$). The two low benefits were (a) Personal and out how a muscle works ($M = 2.76$, $SD = .97$), Societal and if job satisfaction is greater for full-time or part-time workers ($M = 2.84$, $SD = .83$).

2. Subjects

The Ss were 75 male and 75 female introductory psychology students at Colorado State University. They elected to participate as one alternative for meeting a course research requirement.

3. Procedure

Ss were seen individually by the E in a room containing a number of pieces of electronic equipment. They were given the following instructions:

I am going to ask you to participate in an experimental procedure today. One that some people find uncomfortable. First, though, I would like to make sure that the procedure I want you to take part in will not make you more uncomfortable than you are willing to be. Since I can't tell you specifically about the procedure I have in mind before we actually start the study, I have included it in these two lists of procedures (S handed two lists) and I'd like you to mark those procedures on the lists which you would be willing to undergo. In other words, I can tell if the procedure I want you to participate in is acceptable to you.

The lists of procedures given to the Ss were developed in the earlier study by Farr and Seaver (6). Some alterations had to be made in four of the 30 items on the physical list and in 10 of the 15 items on the psychological list in order to preserve the realism of the experimental situation. It was necessary, for example, to change the wording of items that included a description of Ss' behavior during the procedure, or unexpected events that would happen since, in a realistic experimental setting, these could not be known beforehand. All of the alterations were intended to preserve the general content and level of stress of the original Farr and Seaver procedures. As an example, Farr and Seaver's item, "Electrodes are attached to your scalp, and during the study the electronic device to which they are connected shorts out and begins to smoke" was changed to "Electrodes are attached to your scalp and are connected to an electronic device which is making a loud humming and is smoking."

After the Ss were handed the two lists, they were told that shortly they would be asked to draw a line on each to indicate that all procedures above the line were acceptable, and the first one below the line was not. They were also to check any other procedure below the line that they found acceptable. They were informed that they did not have to take part in any

procedure that they had not marked as acceptable and that they would be free to end their participation at any time.

Ss were then handed a consent form which reiterated the instructions they had just been given and stated the benefit, either to themselves or to society, that was expected from their participation in the as yet unnamed procedure. They were randomly assigned to one of five benefit conditions so that there were 15 males and 15 females in each.

a. Low personal. "I understand also that my participation in this experiment will probably benefit me by teaching me how a muscle works."

b. High personal. "I understand also that my participation in this experiment will probably benefit me by teaching me to speak more forcefully and confidently."

c. Low societal. "I understand also that my participation in this experiment will probably benefit society by finding out if job satisfaction is likely to be higher for full-time or part-time workers."

d. High societal. "I understand also that my participation in this experiment will probably benefit society by devising ways for old people to live more meaningful lives."

e. No stated benefit. no statement about benefit was made.

As Ss were given the consent form, the E also stated the benefit, so that all Ss both heard and read the expected benefit. Finally, the Ss were told that they might not see much relationship between the procedures on the lists and the benefit offered, but that this would be clarified at the end of the experiment. Any questions were answered by paraphrasing the instructions.

After Ss finished marking the lists, they were informed that, contrary to what they had first been told, they really would not have to participate in any further procedure. They were thoroughly debriefed. They were told about the nature and purposes of the experiment, were asked about the feelings and reactions they had experienced, and were requested to keep the experiment confidential. No S reported prior knowledge of the experiment during debriefing.

C. RESULTS

In order to determine whether the amount of stress Ss find acceptable is influenced by the degree and type of expected benefit, an analysis of variance was performed for each of two dependent variables: the number of items Ss marked as acceptable on the physical list and the number marked on the psychological list. On the list of physically uncomfortable

procedures, there were no significant differences related to sex, benefit, or the interaction, $F(1, 140) = 3.03$, F 's (4, 140) = .63, .45, respectively. For the psychologically stressful list, there were no significant differences related to benefit or the interaction, F 's (4, 140) = 1.90, .14. However, significant sex differences were found, $F(1, 140) = 6.57$, $p < .05$, indicating that males ($\bar{x} = 11.59$) were willing to tolerate significantly more psychological discomfort than females ($\bar{x} = 10.53$).

Since the benefits offered had no significant effect on the level of acceptable stress, the data were collapsed over benefits for the remaining analyses. Three frequency distributions, one for the physical list and one each for males and females on the psychological list, were constructed to show the percentage of S s who endorsed each item as acceptable.¹

Pearson correlation coefficients were determined to show the relationship between Farr and Seaver ratings and the corresponding percentages of acceptability found in the present study. For the physical stress items, $r = -.96$; on the psychological stress items, r (males) = $-.81$, and r (females) = $-.83$.

D. DISCUSSION

One unexpected and important result is that, when S s were routinely presented with information about the anticipated personal or societal benefits of an experiment, neither the level nor the type of benefit had any effect on the amount of stress found acceptable. Rather than accepting more stress for higher levels of benefit, S s seemed to be concerned only with the amount of stress they might experience in the research. The present outcome suggests that at least introductory psychology students quickly may resort to a rather self-protective mode of functioning when confronted with the possibility of discomfort. Psychologists should perhaps be extremely cautious when they attempt to justify a stressful deception experiment on the grounds that S s will feel that the results are worthwhile to themselves or to society.

Even though the expected results were not obtained, the hypothesis that S s operate on a risk-benefit model cannot be conclusively eliminated. It may be, for example, that the benefits used in this experiment, though clearly rated high in a nonthreatening situation, were simply not valuable enough to act as a motivator when S s were actually confronted with the

¹ These distributions are available from the senior author at the address shown at the end of this article

possibility of discomfort. Alternatively, Ss might have been more influenced by the benefits had they been highlighted by the *E*, or had they been more immediately gratifying. It is possible that such effects, however, would not be caused by the benefits themselves, but rather by some other pressure, perhaps a subtle coercion to respond in a socially desirable way. The current study was designed to circumvent these extraneous influences since, by offering many procedures instead of only one, the *E* did not apply additional social pressure by communicating to Ss that he was specifically invested in their accepting any one of them.

Another unexpected result in this experiment was that males were willing to accept significantly more stress than females in psychological but not physical procedures. The results on the physical list were surprising because some earlier work (15) has suggested that men can tolerate more physical pain than females. The present results indicate, however, that men may be no more willing than women to undergo such discomfort. On the psychological list, the overall differences between men and women derived mainly from five items where the acceptability for the two sexes differed by more than 10%, always in favor of the males. When the item content is studied, one plausible explanation is that the differences may be caused by women's greater willingness to express fears and anxieties they may feel in social contexts. The only evidence in the literature supporting such a hypothesis, however, is based on samples of younger children (9). The sex of the *E* may have been an influential factor in the sex differences found in the current study (14), but no simple interpretation is immediately obvious.

The results of this study provide an objective and reliable measure of the percent of acceptability of different experimental procedures; the reliability is indicated both by the extent of agreement between the male and female samples, and by the high correlation with the results of Farr and Seaver's method of assessing the perceived stressfulness of the procedures. Psychologists planning a deception experiment can use the method presented to obtain a useful estimate of the percentage of Ss who would be willing to undergo a planned procedure if they had an opportunity to give informed consent.

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A SECOND-ORDER FACTOR ANALYSIS OF COMMUNITY SATISFACTION IN A MIDWESTERN CITY*

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SUMMARY

First-order community satisfaction factors derived in an analysis of data from a random sample of adult residents from a middle-size Midwestern city ($N = 138$) were subjected to second-order factor analysis; an oblique solution with three factors resulted. These data suggest a closer relationship between physical and social dimensions of community for this sample than found in previous studies.

A. INTRODUCTION

Psychologists, sociologists, and town planners have long been interested in relationships between an individual's satisfaction with his community and its physical and social structure. Physical-ecological determinists, such as Howard (9), Mumford (11, 12, 13), and Stein (15) stress the importance of physical variables (e.g., architecture, green space allocation, and population density, size, and heterogeneity) as overriding determinants of satisfaction. Conversely, social-psychologists, such as Barker (4), Proshansky *et al.* (14), and Ittleson (10) stress the role of social milieu. According to this view, the physical environment is related to satisfaction with the community largely through its interaction with social-psychological and cultural variables.

One of the questions of particular importance in this discussion concerns the manner in which individuals organize the various aspects of their community's environment. A recent factor analysis of a community satisfaction attitude instrument administered to a random sample of residents of a British new town (1) resulted in a solution with nine oblique factors; however, social and physical variables loaded on separate dimensions.

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Further analysis revealed five second-order oblique factors: social interaction, comparative quality of housing, degree of alienation from community institutions, adequacy of housing and income, and social and physical livability (3). At this more abstract level, social and physical components of community were found to be intertwined. This result suggests that new town residents (a) perceived both social and physical community components and (b) saw these dimensions as abstractly related though differentiated.

In another application of the community satisfaction instrument, responses from residents of a middle-size Midwestern city were analyzed (2). Here, too, a solution with nine oblique factors resulted, but there was no clear differentiation of social and physical environmental components. The following first-order factors were obtained: I) satisfaction with social institutions and the physical environment; II) closeness, neighborliness, and quietness; III) excitement/dullness; IV) adequacy of housing and income; V) social distance; VI) religious brotherhood; VII) status affect; VIII) alienation; and IX) belongingness/isolation. This current paper involves a second-order factor analysis of these first-order factors.

B. METHOD

Data analyzed were obtained from a random sample of 138 adult residents of a middle-size Midwestern city. Each respondent was asked to complete the 36 items of the Community Satisfaction Scale (CSS) and a personal data section.² The CSS items were in a standard five-position Likert response format. They covered the broad range of community facilities and functions including housing, churches, educational facilities, open space, economic functions, interaction with neighbors and others, politics, and normative integration. The CSS was found to be highly reliable when applied to this sample; a Cronbach's coefficient of reliability, alpha, of .92 was obtained. The correlation matrix obtained in the first-order factor analysis was employed in this second-order analysis.

C. RESULTS AND DISCUSSION

Eigen values were calculated for the correlation matrix. The scree test (5) indicated three factors. An iterative principal axis solution was applied to the correlation matrix until communalities stabilized in the third decimal place. A Kaiser Varimax Orthogonal Rotation (8) was applied to the factor

² Scale items are available from the authors.

matrix, followed by a Maxplane oblique rotation (7), 12 geographical rotations (6), and finally a Maxplane clean-up rotation, resulting in a 37 percent .15 width hyperplane. The resulting factor pattern can be found in Table 1. All variables loading at .40 or higher were included in the interpretation. Few problems were encountered in interpreting the second-order factors obtained.

Factor I: Acceptance-Alienation

First-order factors loading on Factor I include "social distance," "status affect," and "alienation." Since all first-order factors deal with one's social acceptance in the community, a general classification such as "Acceptance-Alienation" seems most appropriate.

Factor II: General Satisfaction I

Factor II is a complex general factor involving such first-order factors as "closeness, neighborliness, and quietness," "adequacy of housing and income," and "alienation." Since social and physical dimensions of community load highly on Factor II, it was labeled as a general factor.

Factor III: General Satisfaction II

Factor III is another general satisfaction factor. First-order factors loading heavily on this second-order factor include "satisfaction with social institutions" and "satisfaction with the physical environment."

TABLE 1
FACTOR PATTERN

Variables	I	II	III
Satisfaction with social institutions and physical environment	.05	-.01	-.87
Closeness, neighborliness, and quietness	-.04	-.67	-.10
Excitement/dullness	.24	.27	-.31
Housing/income	-.34	-.43	-.55
Social distance	.42	-.02	-.09
Religious brotherhood	.10	.27	-.16
Status affect	.90	-.27	.22
Alienation	.74	.62	.06
Belongingness/isolation	-.16	-.07	-.39

D. CONCLUSIONS

The results obtained for this sample of Midwestern city residents are vastly different from those obtained previously for British new town residents. For the British respondents, a solution with five factors resulted; here, only three second-order dimensions were obtained. Also, in this instance, there was a tendency for social and physical components of community to be more tightly intertwined than in the British case.

These results have major implications for both social psychology and town planning, especially when compared to the British results. First, these solutions reflect major variations in what are generally defined to be two very similar cultural groups. Often, especially in town planning, cultures are defined as "Western" or "non-Western" and facilities are created that are meant to "fit" these broad cultural types. These data suggest, however, that issues are much too complex for such a gross division. Instead, they tend to support the broad social and behavioral science perspective (emanating from psychology, anthropology, and sociology) that stresses learned variability in individual perceptions and uses of their environment.

Second, these data also tend to support the "social psychological" rather than the "physical-ecological determinist" position concerning an individual's satisfaction with community. Since British and American data reflect such major variation in factor patterning, it is unlikely that a simple, one-to-one, causal relationship exists between physical variables and satisfaction. Instead, the data suggest a much more complex relationship involving both physical and learned (cultural) components. The exact nature of these relationships, whether causal or associational, seems subject to great variability which will only be explicated through a great deal of further research.

Finally, this study also indicates a possible relationship between planning and dimensions of community satisfaction. In the planned community, where physical planning has been an integral part of most residents' daily lives, social and physical dimensions of community were clearly differentiated at least in the first order. In the nonplanned environment, no such clarity existed. A possibly fruitful extension of this research would be to analyze relationships between exposure to physical planning and planning principles and the separation of physical and social components of satisfaction. It may be that by stressing physical design, planners are modifying residents' perceptions of their community's physical and social environments.

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PERCEIVED SITUATIONAL MODERATORS OF THE RELATIONSHIP BETWEEN ROLE AMBIGUITY, JOB SATISFACTION, AND EFFECTIVENESS*

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SUMMARY

The moderating effect of situational factors in the relationship between role ambiguity, job satisfaction, and effectiveness was tested by a sample of 108 nurses. Results indicated that the negative relationships generally reported between role ambiguity, satisfaction, and effectiveness were less significant for individuals who perceived higher levels of involvement, task freedom, decision making involvement, and teamwork in their units. It is suggested that variations in organizational structure may be an important strategy for reducing the negative impact of role ambiguity.

A. INTRODUCTION

Role ambiguity has been demonstrated in a plethora of recent studies (3, 11, 15, 16, 21, 26) to be adversely related to various personal outcomes, e.g., job satisfaction, voluntary turnover, etc.¹ A few studies (1, 17) have also indicated a negative relationship between role ambiguity and effectiveness. Yet, an open-systems view of organizations suggests that there are certain organizational settings and environments where some degree of role ambiguity is not only inevitable but possibly quite functional and necessary for adaptation (4, 19). Indeed, role ambiguity is so prevalent in large, complex organizations with intensive technologies (e.g., hospitals) that it is **virtually inconceivable that all jobs could be redesigned so that it is eliminated entirely**. In view of this, House (2) has suggested that efforts should be directed not so much at eliminating role ambiguity but rather

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toward exploring and studying ways in which organizations can minimize its potential dysfunctionality and maximize its potential functionality.

Several studies have revealed that the effects of role stress may be moderated by both individual differences (2, 9, 10, 14) and organizational level (5, 22, 23). There have been few attempts, however, to study the effects of situational characteristics which may possibly moderate the impact of role stress on the organization and its members. Beehr (1) found that a structural characteristic like job autonomy tended to moderate strongly the relationship between role ambiguity and personal effectiveness. The level of employee participation in the organization's decision making process has also been shown to moderate the detrimental effects of role ambiguity on job satisfaction (23). In addition the research on individual differences as moderators has suggested that information flow is important in moderating the relationship between role ambiguity and satisfaction and performance (23). Both the involvement in decision making and the information flow suggest that a feeling of teamwork should also act to moderate role ambiguity, satisfaction, and effectiveness relationships.

Studies by Woodward (27) have revealed that the organization's technology moderates the relationship between role stress and organizational effectiveness. For example, she found that potential role conflict, as embodied in multiple-authority relationships, was often quite functional in technically advanced firms. More recent evidence suggests that levels of role ambiguity are affected by the degree of convergence or "fit" among an employee's task, organizational structure, and technology (24).

In this present investigation, conducted in a medium-sized hospital, three situational characteristics were hypothesized as moderating the relationships between role ambiguity, job satisfaction, and effectiveness. Interdepartmental information flow, decision making involvement, and teamwork were proposed as moderating variables in view of the proposition that complex organizations with intensive technologies require extensive investments in integrating and coordinating activities (12, 25). The hospital has been described as a prime example of an open-systems organization characterized by "inevitable" role ambiguity (3, 13, 18, 20); hence it provided a particularly good setting to test these relationships.

Two hypotheses were tested as follows:

I. The relationship between role ambiguity and job satisfaction will be less negative for individuals who perceive a higher level of (a) interdepartmental information flow, (b) involvement in the decision making system, and (c) teamwork in their unit.

H. The relationship between role ambiguity and effectiveness will be less negative for individuals who perceive a higher level of (a) interdepartmental information flow, (b) involvement in the decision-making system, and (c) teamwork in their unit.

B. METHOD

1. Sample

The sample consisted of 138 nurses providing relatively homogeneous health care services in a medium-sized (500 beds) Northeastern Veterans Administration hospital. Written questionnaires were administered on site in small groups. Anonymity was assured, and administration time took approximately 45 minutes. The response rate was 78.3 percent, and the missing responses were spread across the entire hospital.

2. Measures

The questionnaire had Likert-type items with five point response scales. Measures of all variables were created via a principal components factor analysis with varimax rotation (17). For purposes of developing scales, items were selected for scoring on each factor when they loaded greater than or equal to .50 on only one factor. Only factors with eigenvalues greater than 1.0 were considered. The *role ambiguity* measure consisted of summing responses to two questionnaire items, which emphasized the clarity of behavioral requirements and were conceptually similar to the previous work of other researchers (9, 21). One of these questions was, "To what extent do people in your department know what their jobs are?"

Interdepartmental information flow was measured by summing the responses to five questionnaire items which emphasized the sharing of task-relevant information between departments and shifts. Typical of these questions was, "To what extent do people in different departments plan together and coordinate their efforts?" The measure of *decision making involvement* was developed by summing responses to six questionnaire items. These items described the extent to which decisions were made on the basis of full and accurate information involving directly those individuals affected by the decisions. One of the questions was, "To what extent are decisions made at the levels where the most adequate and accurate information is available?" *Teamwork* was measured from responses to eight questionnaire items that were designed to tap the degree to which people in a department were willing and encouraged to listen and help one another in

doing their jobs. One of these questions was, "To what extent do you feel the people in your department work together as a team?"

A measure of *job satisfaction* was derived by summing responses to three questionnaire items. These questions asked about the members' overall satisfaction with their job, work activities, and with their performance. *Life-involvement* was estimated by scoring responses to the question, "On the basis of your experience and information, how would you rate your department on effectiveness?"

The measures of all of the variables were of the subjective, self-report variety; they were the perceptions of the respondents. Beehr (1) has pointed out, however, that respondents' "perceptions" are appropriate in this type of research, since role ambiguity represents to a considerable extent the individual's reaction to his/her environment. For instance, regardless of a co-worker's objective behavior (or intentions), it cannot be said that an employee is involved in teamwork unless that employee feels (perceives) being part of the team. Also, the effectiveness measure asks the individual to assess his or her department's performance, and there should be less bias in this self-report than would be expected from the department head, for example.

3. Analysis

Multiple linear regression has been used to examine relationships such as those hypothesized in this research (*cf.* 23). The technique examined the variance explained by restricted, main effects regression models as compared to the variance explained by full (main and interaction effects) regression models, and the β weights were used to determine the direction of the significant interactions. Tests for significant differences between restricted and full regression models were determined according to Hulin and Smith (8).

C. RESULTS

The results in Table 1 show that role ambiguity was significantly, negatively related to both job satisfaction and effectiveness. As expected, the three situational characteristics were significantly, positively related to both job satisfaction and effectiveness (*cf.* 13).

The results of the full *versus* restricted linear regression models are presented in Table 2. This table shows the R^2 and β weight for role ambiguity with effectiveness and job satisfaction and the multiple R^2 and β weights as the three situational variables are added stepwise to the regres-

TABLE 1
ZERO-ORDER CORRELATIONS BETWEEN MEASUREMENTS

Variable	Role Ambiguity (RA)	INF	DM	TW	JS
Interdepartmental information flow (INF)	-.33				
Decision making involvement (DM)	-.44	.32			
Teamwork (TW)	-.50	.54	.69		
Job satisfaction (JS)	-.39	.32	.54	.49	
Department effectiveness	-.49	.35	.52	.61	.44

Note: All correlations $p < .001$. Spearman-Brown reliability coefficients appear in parentheses in column headings.

TABLE 2
MAIN AND INTERACTION EFFECTS WITH THE USE OF ROLE AMBIGUITY, TEAMWORK, DECISION MAKING INVOLVEMENT AND INTERDEPARTMENT INFORMATION FLOW WITH DEPARTMENT EFFECTIVENESS AND JOB SATISFACTION ($N = 138$)

Dependent variable	Department effectiveness			Job satisfaction			Δ
	β	R^2	F	β	R^2	F	
1. <i>RA</i> (Role Ambiguity) (<i>RA</i>)	.49	.24	41.9	-.09	.15	24.2	1.88
2. Teamwork (<i>TW</i>), <i>RA</i>	-.23	.42	48.2	.04	.31	54.3	2.83
3. <i>TW</i> , <i>RA</i> , Decision making involvement (<i>DM</i>)	-.22	.43	33.4	.15	.33	22.4	6.54
4. <i>TW</i> , <i>RA</i> , <i>DM</i> , Interdept information flow (<i>INF</i>)	-.22	.43	24.9	.15	.33	16.7	4.05
5. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-DM</i> ^a	.24	.43	20.1	.18	.34	18.4	5.02
6. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-TW</i> ^b	.31	.44	20.5	.18	.34	18.4	5.02
7. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-INF</i>	.55	.46*	22.1	.28	.34	18.7	5.02
8. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-DM</i> , <i>RA-TW</i>	.01, .29	.44	16.9	.16, .01	.34	11.1	6.57
9. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-DM</i> , <i>RA-INF</i>	-.32, .76	.46*	18.6	-.05, .31	.34	11.3	6.57
10. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-TW</i> , <i>RA-INF</i>	-.32, .81	.46*	18.5	-.21, .44	.34	11.4	6.54
11. <i>TW</i> , <i>RA</i> , <i>DM</i> , <i>INF</i> , <i>RA-DM</i> , <i>RA-TW</i> , <i>RA-INF</i>	-.24, -.22, .88	.46*	15.9	.03, -.23, .43	.34	9.7	7.13

* The β weights are given respectively for the italicized variables on each line (e.g., on line 8 the β for *RA-DM* = .01 and β for *RA-TW* = .29).

^b Refers to interaction term; i.e., the interaction of role ambiguity and decision making involvement.

* These R^2 's show a significant ($p < .05$) increase over the restricted model R^2 .

sion model. Then the interaction effects regression models and their R^2 and β weights are presented.

The data in Table 2 show that there was a significant increase in explained variance in departmental effectiveness with use of the full model with all interaction terms *versus* the restricted model with no interaction terms ($R^2 = .46$ *versus* $R^2 = .43$). Also, there was a significant increase in explained variance in effectiveness with use of the main effects plus the role ambiguity/information flow interaction model *versus* the restricted model ($R^2 = .46$ *versus* $R^2 = .43$). In fact, the role ambiguity/information flow interaction is the key interaction in terms of increasing explained variance. Adding this one interaction term increases the explained variance as much as adding all three interaction terms, and the other two interaction terms considered separately increase explained variance only slightly ($R^2 = .43$ for the role ambiguity/decision making interaction and $R^2 = .44$ for the role ambiguity/teamwork interaction).

An examination of the β weights reveals support for the directionality of the hypothesis regarding effectiveness. The simple β for role ambiguity is $-.49$ and the β weight for role ambiguity in the restricted model is $-.22$. For each interaction term, the β weight is positive and rather large for the role ambiguity/information flow interaction term ($\beta = .55$ with only this term added and $\beta = .88$ in the full model).

The data in Table 2 indicate for job satisfaction no significant increase in R^2 for the full model *versus* the restricted model ($R^2 = .34$ *versus* $R^2 = .33$) nor for the full model *versus* the models with one interaction term added. However, the data do show that while role ambiguity was negatively related to job satisfaction ($\beta = -.39$), the β weights for all three interaction terms added individually were positive as was the β weight for the role ambiguity/information flow interaction term in the full model.

D. DISCUSSION

It was hypothesized that situational factors associated with a complex and intensive technological organization would mediate the potentially adverse consequences of role ambiguity documented in the literature. The results indicate that the negative relationship between role ambiguity and effectiveness was significantly less substantial for individuals who perceived higher levels of interdepartmental information flow. The mediating effect of teamwork and decision making involvement were also in the predicted direction.

Of note in these results is the fact that role ambiguity and the situational

factors explained a smaller amount of the variance in job satisfaction than in effectiveness. Also, the moderating effects of the situational factors were not significant for job satisfaction, though in the predicted direction. This finding is interesting, since other research (cf. 23) has found significant relationships involving role ambiguity, moderators, and job satisfaction rather than role ambiguity, moderators, and effectiveness. It appears that job satisfaction was different from perceived departmental effectiveness insofar as their relationships with role ambiguity and the moderators were concerned, and nurses may be unique in their perceptions regarding job satisfaction and effectiveness as related to role ambiguity. It may be that they understand and adapt to the role ambiguity inherent in their jobs insofar as its effect on their job satisfaction, but they do perceive role ambiguity as impacting negatively on effectiveness unless information is shared across units.

The results can also be interpreted as further support for the contention that congruent matches of task-structure-technology are associated with lower levels of role ambiguity than incongruent matches of these variables (24). The implication for managers is that variations in the organizational structure may be as important in reducing the dysfunctional effects of role ambiguity as attempts to reduce the ambiguity directly. Indeed, in some organizations and environments where role ambiguity cannot be avoided, the former may be the most feasible strategy. We are currently conducting a followup study of these relationships in another setting.

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ENVIRONMENTAL NOISE, PERCEIVED CONTROL, AND AGGRESSION*

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SUMMARY

The effects of aversive noise on aggressive responding were examined under conditions of control or no control over termination of the aversive noise. It was hypothesized that the effects of control would differ under conditions of high and low noise, with control decreasing aggression under high stress. College males ($N = 48$) were exposed to either loud noise or soft noise under conditions of control or no-control over termination of the noise. Contrary to previous findings control did not reduce aggression under loud noise; however it did lead to increased aggression under soft noise. These results are discussed in terms of predictions derived from Seligman's learned helplessness theory.

A. INTRODUCTION

Evidence is mounting that unpleasant, noisy, and crowded environments exact a toll on human social behavior. Americans in stressful environments are less attracted to others (5), less altruistic (9), and under some circumstances more aggressive (2, 3) than people in nonstressful environments. In addition, certain cognitive factors appear to increase or decrease people's susceptibility to environmental stress (1).

One of the most interesting and potentially applicable findings in recent research is that a perception of control over environmental stress can reduce its negative influence on social behavior, even though control is unexercised (4). For example, people with perceived control over crowding are less frustrated (8) and those with perceived control over noise are both more altruistic (9) and less aggressive (2, 3) than those with no perception

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¹ Order of authorship was determined by random procedures. Reprint requests may be sent to either of the authors at the addresses shown at the end of this article.

of control, even though they all experience the same degree of environmental stress. However, in the case of aggression the effects of perceived control are not as simple as they might seem at first glance. In fact, depending on what theory one adopts, it can be argued that perceived control can either *decrease* or *increase* one person's aggression toward another.

In an influential series of experiments, Glass and Singer demonstrated that individuals with perceived control over aversive noise were more resistant to frustration following noise exposure than individuals with no perception of control, even though control was unexercised. They argued that perceived control reduces the "behavioral residues" of stressful environments. If perceived control decreases frustration by reducing behavioral residues, it follows that it may also make people less aggressive. In fact, this is exactly what was found in two recent experiments. Perceived control of aversive noise made people less aggressive during exposure to noise (3), as well as after exposure to noise (2), although both effects applied only to Ss who had been previously angered or attacked.

The exact opposite prediction is made by Seligman's learned helplessness theory (7). According to Seligman, when organisms have no perception of control over environmental stress, they learn that outcomes are independent of responses. Consequently their motivation to emit voluntary responses decreases. In contrast, when they have a perception of control over environmental stress, they expect outcomes to be dependent on responses and they emit a high rate of voluntary responses. Accordingly, if the response in question is aggression, helpless individuals should emit few aggressive responses while those with perceived control should emit a high rate of aggressive responses. In fact, a study with rats (6) confirms this hypothesis. Rats which had previously experienced escapable shock were more aggressive when subsequently shocked in the presence of another rat than rats which had previously experienced inescapable shock.

The present experiment was designed to study the effects of noise and perceived control on human aggression. Ss experienced either loud aversive noise or soft soothing noise and then had an opportunity to engage in aggressive behavior. Half in each condition had a perception of control over noise, while half did not. If perceived control reduces the behavioral residues of aversive stimulation and lowers frustration—as Glass and Singer argue—then it should *decrease* the amount of aggression following loud obnoxious noise but have no effect following soft soothing noise: in the latter case there should be no residues to reduce. However, if perceived

control increases motivation for responding—as Seligman argues—then it should increase aggression following both loud and soft noise

B. METHOD

1. Subjects

Ss were 48 undergraduate males enrolled in a small liberal arts college, who were recruited and paid \$1.50 for their participation in the experiment. The *E* was a young adult male, and *E*-*S* interaction was minimized by presenting all instructions in printed form. Ss were randomly assigned and individually tested in a 2 (loud noise/soft noise) \times 2 (perceived control/no control) factorial experiment with 12 Ss per condition

2. Independent Variables

Ss were seated in 5 \times 7 ft. soundproof room 3 ft. in front of a speaker with a peak capacity of 30 watts and a voice coil impedance of 8 ohms. Loud-noise Ss heard an 18-minute tape of continuous 94 db noise consisting of four superimposed sound tracks, while soft-noise Ss heard 18 minutes of continuous 60 db noise consisting of a soothing seashore sound (10).

Perceived control Ss read the following paragraph in their experimental booklets:

You will also be performing these tasks while listening to a tape recording of various environmental sounds. Although we would prefer that you perform these tasks *with the tape recording on*, you can terminate the sound at any time by using the switch located on the right side of the desk. Whether or not you use the switch is up to you. In the past, some people who have been in the experiment have chosen to work without the background sound; others have decided to leave it on. For the purposes of the present study, we would much rather have you work with the background sound on, but the choice is entirely up to you. At this point please notify the *E* if you have any questions. No Ss actually exercised their control options; hence all were exposed to sound for the same amount of time.

3. Dependent Variables

a. Aggression. When the tasks had been performed, Ss were told that their participation in the experiment was completed. However they were asked to assist the *E* by programming a random sequence of sounds on a tape recording that would be heard by Ss in a different experiment dealing with responses to random sound. It was explained that in order to generate

"truly random" sound, the *E* needed a number of people to program different tapes. *Ss* were then shown a tape recorder, headphones, and a control switch that produced two types of sound: a loud, harsh, unpleasant buzz and a soft, soothing hum. *Ss* were instructed to put on the headphones and listen to a sample of each sound. They were then told that they would have five minutes to produce any combination of the unpleasant buzz, the soft hum, or no sound at all, for any amount of time and in any ratio they chose. The control switch was linked to two timers that recorded the number of seconds allocated to each sound. After hearing the sample sounds, *Ss* were asked to remove their headphones and place them on the table, so that the sounds being programmed were clearly audible but were not heard at full volume directly in the *Ss*' ears. Then the tape recorder was turned on and the *E* left the room and signalled the *S* to begin.

b Questionnaire After five minutes, the *E* returned and distributed a final questionnaire containing manipulation checks and reactions to the experiment. On 15-point scales *Ss* rated the stressfulness of the initial noise they heard while performing the tasks, their degree of perceived control over the noise, the importance of control, the enjoyableness of the experiment, and their likelihood of participating in future psychology experiments.

C. RESULTS

1. Manipulation Checks

Ss in the high noise condition described the experiment as significantly more stressful than did those in the low noise condition ($F = 31.39$, $df = 1/44$, $p < .00005$). *Ss* in the perceived control condition described themselves as more free to turn off the sound ($F = 40.56$, $df = 1/44$, $p < .00005$) and as feeling it was more important to be free to turn off the sound ($F = 11.75$, $df = 1/44$, $p < .005$) than did those in the no perceived control condition (see Table 1). No other significant effects were found on the postexperimental questionnaire.

2. Dependent Measures

The two principal dependent measures were total amount of sound recorded and the proportion of the total sound which was aversive. For total sound, there were no significant effects ($F < 1$). For proportion of the total sound which was aversive, there was a significant effect of stress ($F = 6.79$, $df = 1/44$, $p < .02$) and a significant stress by perceived control interaction ($F = 4.94$, $df = 1/44$, $p < .05$).

The effect of stress was that, as expected, Ss in the high noise condition recorded a higher proportion of aversive sound than did those in the low noise condition (see Table 1). The significant interaction means that the main effect for stress must be qualified. In fact, for Ss without perceived control, the effect of noise was exactly as described for the stress main effect ($t = 11.67$, $df = 144$, $p < .005$). For Ss with perceived control, however, there was no significant difference between high noise and low noise conditions ($F < 1$).

D. DISCUSSION

The results of this experiment further support the proposition that aversive environments produce antisocial behavior. The present data demonstrate that even unprovoked people can become aggressive when exposed to continuous, loud, unpleasant environmental noise. Indeed, the present findings are dramatic because aggression was not only elicited from unprovoked Ss but was directed toward some unknown future individual—someone completely unrelated to the present experiment who had no prior interaction with the S.

The most interesting theoretical question involved the effects of perceived control. Perceived control over loud noise failed to have any ameliorative effect on Ss' aggressive behavior; instead, it made those who

TABLE 1
MEAN SCORES ON INDEPENDENT VARIABLE MEASURES
IN EACH CONDITION

Variable	Loud noise		Soft noise	
	No Control	Control	No control	Control
Total amt. of sound in sec.	216.84	197.50	205.02	206.98
Ratio of unpleasant Sound to total sound	.54	.50	.35	.48
Stress rating of initial noise	9.42	8.92	5.10	3.50
Degree of perceived control rating	5.17	10.45	1.75	9.83
Importance of perceived control	4.36	9.00	5.92	8.83
Enjoyableness of experiment	8.08	9.25	8.25	8.83
Likelihood of volunteering for future experiment	9.42	10.50	8.16	9.91

Note: For all questionnaire ratings, 1 = low, 15 = high.

had been exposed to soft noise as aggressive as those who had listened to loud noise. This finding is surprising in light of the theoretical predictions of Glass and Singer and results of prior research (2, 3). Yet the present data confirm rather clearly the predictions of Seligman's learned helplessness theory concerning increased motivation and response rate as a result of perceived control.

A number of questions need to be considered, however, before the learned helplessness explanation can be fully accepted. First, if perceived control increased aggression for soft-noise Ss, why didn't it have a similar effect on loud-noise Ss? Perhaps loud-noise Ss without control had already reached some "ceiling" on the amount of unpleasant sound that could be legitimately programmed under the perceived constraints of "randomness." Despite the increased motivation of perceived control, control-Ss did not exceed what may have seemed like a maximum acceptable level of random unpleasant sound. Consistent with this explanation is the finding that the total amount of sound *vs.* silence did not differ significantly across the four conditions; only the ratio of unpleasant sound to total sound differed significantly and then only in the soft-noise condition.

Second, what accounts for the different results in the present experiment as compared to prior findings (2, 3), in which perceived control reduced aggression for Ss who had been previously angered or attacked but not for unprovoked Ss? The anger manipulations in the latter two experiments may have made the crucial difference. It is plausible that if one is angry and frustrated about receiving shocks from a fellow S, then perceived control might reduce one's irritability and felt frustration. In fact, it was found (2) that perceived control Ss rated the noise as less aversive than no-control Ss. In addition, the present experiment is not comparable with the other two, because Ss in the other experiments were allowed to aggress against a specific "fellow S" instead of against an unknown future S. Thus in the no-anger conditions of the other two experiments, it may have seemed inappropriate for Ss to aggress against another individual in the experiment, who was in no way responsible for their plight, despite the stress of loud noise. In the present experiment, since the target of aggression was an unknown future individual, Ss may have been less likely to suppress their aggressive responses under the stress of loud noise.

Finally, since we have argued that perceived control increases the motivation for responding regardless of the nature of the response, why did not the perceived control Ss program more soft noise than the no-control Ss? Perhaps the production of a loud harsh, unpleasant buzz was seen as a

"larger," more consequential behavior than producing soft hum, and thus perceived control Ss opted for the more audible, more "effective" response.

It should be emphasized that there were no significant differences across the four conditions on questions measuring the aversiveness of the sound, the enjoyableness of the experiment, or Ss' likelihood to volunteer for future experiments. Thus the present findings cannot be attributed to attitudinal changes regarding the noise or the experiment in general.

The present research supports the motivational predictions of Seligman's learned helplessness theory and demonstrated the possibly counterintuitive notion that perceived control can increase aggression, at least under some circumstances. This notion may not appear so surprising or counterintuitive, however, when it is rephrased in terms of Lord Acton's oft quoted maxim, "Power corrupts." In other words, control may corrupt, at least some of the time. In light of the present and prior research, we suggest that perceived control can either increase or decrease aggression, depending on specific circumstances. Identification of the precise circumstances requires further research but we offer the tentative proposal that perceived control may reduce aggression when Ss have been previously angered or provoked, and control serves to reduce their frustration; when no provocation is involved and when constraints against aggression are weak, perceived control may increase aggression, to the extent that it produces an increase in response motivation. What is most clearly demonstrated in our own data, as well as others', is that aversive environments can lead to aggressive behavior. The costs of unrelieved environmental stress appear to be a wide range of antisocial behavior.

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A MEASURE OF COOPERATIVE, COMPETITIVE, AND INDIVIDUALISTIC ATTITUDES*

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SUMMARY

Six studies involving over 6000 students from kindergarten through college were sequenced over a period of years to develop three relatively independent self-report scales with substantial internal reliability to measure attitudes toward cooperative, competitive, and individualistic interdependence between oneself and others in educational settings. The purpose of the scale development was to provide a research tool for social scientists interested in social interdependence. In addition, evidence consistent with a multidimensional view of social interdependence was gathered, and some additional evidence indicating a change in conceptions of the three types of social interdependence in junior high school was found.

A. INTRODUCTION

There are several hundred studies comparing the relative effects of cooperative, competitive, and individualistic situations (5, 6). These three types of social interdependence may be defined as follows (3, 5): *Cooperative* interdependence involves a positive correlation among goal attainments of the people involved; *competitive* interdependence involves a negative correlation among the goal attainments of the people involved; and when the goal attainments of people are independent, an *individualistic* situation exists. Cooperative, competitive, and individualistic conditions have been found to be related to performance in achievement situations, self-esteem, achievement motivation, attitudes toward other students, attitudes toward school and subject areas, attitudes toward teachers and other school personnel, locus of control, perspective-taking ability, psychological health, and many other important aspects of cognitive and social development. Despite the proliferation of studies of cooperative, competi-

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tive, and individualistic situations, there is an absence of attitude scales that measure positive or negative dispositions toward the three types of social interdependence. This article seeks to document the development of self-report measures of attitudes toward cooperative, competitive, and individualistic social interdependence for use in instructional settings.

The development of scales measuring attitudes toward social interdependence provides an opportunity to examine their theoretical relationship. Deutsch's (2) original theory assumed that cooperation and competition were opposite ends of a single dimension. Individualistic situations were added in later research with the implication that they were a midpoint between cooperative and competitive situations. Despite the hundreds of studies conducted on cooperative, competitive, and individualistic situations, there is little evidence for clarifying whether or not the three constitute a continuum along a single dimension. Alternatively, the three types of social interdependence may reflect two or three separate dimensions.

B. METHOD

1. *Samples*

The samples were, respectively, the entire student population (over 6000 students from grades 1 through 12) of a suburban school district, 143 12th-graders, 241 7th-graders, 153 12th-graders, 270 7th-graders and 152 college undergraduates. All samples were from a metropolitan area in the Midwest. With the exception of the first sample, each population was a nonprobability sample involving voluntary participation of all students within collaborating teachers' classes. Anonymity of each student was assured.

2. *Scale Development*

The original development of the scales was part of the development of a larger instrument to be used for evaluation of affective outcomes of schools. As part of the Minnesota School Affect Assessment (MSAA), attitude items containing a four-point false-true range were generated to measure such factors as cooperation, competition, and individualistic efforts, importance of school, attitudes toward the teacher, and locus of control. The items were administered to all students in grades 1 through 12 in a large suburban school district in the Midwest (4, 7). The results were subjected to principal component factor analyses with varimax rotations; among the scales resulting were measures of cooperative, competitive, and individualistic interdependence with three items per scale.

Subsequently, five studies were sequenced over three years to develop the attitude scales further. Characterized by recursive cycles of conceptualization, scale development, administration to Ss, and data analysis, the studies were implemented to produce a theoretically sound, internally reliable, self-report measure of attitudes toward social interdependence. The measures of social interdependence changed from Study 1 to Study 6 in several ways. There were more items per scale, the items were more descriptive, there were fewer scale-in-an-item statements (such as, "I like to compete"), and the content of the scales became broadened to include the advantages and value of each type of social interdependence as well as the liking of them. Reading vocabulary level of the items was limited to the 5th-grade level. In the second study a 12-item array with content congruent with the three types of social interdependence was administered to 143 high school seniors. In the third study the item array was broadened to 26 items and administered to 241 7th-grade students. In the fourth study the item array was broadened to 32 items and administered to 153 high school seniors. In the fifth study the 32 item format was administered to 270 7th-grade students and, finally, the 22 items selected to be in the three scales were administered to 152 college undergraduates. The response format for all forms of the instrument in the last five studies was a false-true scale with a seven-point range.

In the second through the sixth studies five issues were addressed: the congruence of the factor structure with the theoretical constructs, the stability of the factor structure across method of factor analysis, the stability of the factor structure across age and sex subgroups, the internal reliability of the item clusters designated for the construct, and the independence among the three scales. As the item array used in the analysis was expanded during the second, third, and fourth studies, responses for each of the populations were analyzed separately. Student ratings to each item array were subjected to Alpha factor analysis with varimax rotation. Those factors with at least three or more rotated factor loadings $\geq .5$ and eigen values ≥ 1 were identified. Items with loadings $\geq .5$ were initial designative items and identified with logical content of each factor. High loading items for each factor comprised the initial item cluster; additional items for each cluster were identified by use of iterative procedures to maximize internal reliability for the cluster. When all high loading items that maximized reliability were identified, they were forced into a three factor structure to check for the robustness of the three component model. Alpha factor analysis and Rao's canonical factor analysis were compared in

one group of Ss, the 153 high school seniors, to determine generalizability of the factor analysis across factor methodology. Other analyses made to test for generalizability included separate Alpha factor analyses across sex and age groups, Cronbach's alpha measure of internal reliability, and correlations among the three scales.

C. RESULTS

Given below, in the following order, are the descriptions of the results of the factor analyses, the examination of factor structures separately for males and females, a test of factor generalizability, a final factor analysis on the items designated for use in the refined scales, Cronbach alpha indices, and interscale correlations.

To heighten the sensitivity of the analysis to dimensions within the item set, initial factor analyses on the responses of each sample were conducted without specifying the number of factors to be generated; the only criterion was that all factors have eigen values ≥ 1 . Among the two 12th-grade samples, analysis conducted under these specifications produced three factors with three or more items loading $\geq .5$ on each factor. High loading items for these factors were used to designate the factors' contents; the logical components were consistently cooperative, competitive, and individualistic interdependence between oneself and others. By contrast, factor analyses without specification of the number of factors in the 7th-grade samples produced up to four or five factors with three or four items with factor loadings $\geq .5$ on each factor. When the logical contents of these item sets were examined, it appeared that logical subsets of cooperative, competitive, and individualistic social interdependence had emerged: liking to cooperate and valuing cooperative learning, liking to compete and valuing competitive learning, and liking to study alone and valuing individualistic learning.

In order to determine whether single measures of cooperative, competitive, and individualistic interdependence could be derived from the items or whether the liking and valuing components of the factors needed to be separated into distinct scales, the factor structures for males and females were examined and a contrast of Alpha and Rao procedures of factor analysis was conducted. Examination of the factor structures for males and females within the 7th-grade and 12th-grade samples provides a clearer picture of the emergence of item subsets. Subsets of cooperation occurred only for 7th-grade females, subsets of competition occurred for 7th-grade males and females, and subsets for individualistic efforts occurred for 7th-grade males and females and for 12th-grade males.

Contrast of Alpha and Rao factor analyses were made for the responses of the 12th-graders in Study 4. Patterns of factor loadings were markedly similar across all analyses when the number of factors was specified at three. When the number of factors was left unspecified, the factor loadings for competitive and individualistic interdependence were markedly similar across the two methods, but the item subsets in the cooperative interdependence factor found in the Alpha analysis for the 7th-grade females were apparent in the Rao analysis for this 12th-grade sample. The otherwise generally high comparability of factor structure across these analyses indicates that the three attitude scales are factorially robust.

The subdivisions of the major constructs into subsets among 7th-graders raised the issue of developing six measures of social interdependence rather than three. The choice to use three attitude scales was made on the basis of several considerations: (a) item subsets did not occur consistently across 7th-grade and 12th-grade samples, (b) there was high continuity between responses of the 7th- and 12th-graders when the subsets of items within each of the three major constructs were combined, (c) the stability of the three primary factors was evident in the comparison of Alpha and Rao factor analyses, (d) indices of internal reliability were more robust when the subset of items found among 7th-graders were combined, and (e) the purpose of the studies was to develop single measures of cooperative, competitive, and individualistic attitudes. The three scales (with the subsets of items indicated) appear in the Appendix.

A final check on the factorial structure of the scales was conducted by submitting the restricted item pool of 22 items to factor analysis. This analysis was conducted for Studies 4 and 5, as the Ss in these studies had answered the full range of 32 items. As a test of the relative independence of the three constructs, the items were forced into three factors. The patterns of factor loading for these analyses reflect a robust and consistent factor structure with item loadings consistent with the logical content of the items. In the 12th-grade analysis, however, three of the individualistic items show notable strong negative loadings on the cooperation scale ($-.50$, $-.48$, $-.45$), while in the 7th-grade analysis three of the competitive items show a positive loading on the individualistic factor ($.38$, $.32$, $.33$) and one competitive item shows a moderate loading on the cooperative factor ($.37$). These loadings are another reflection of the tendency toward item subsets on the three scales among younger students.

Cronbach alpha indices of internal reliability were computed on the three factors reflecting attitudes toward cooperative, competitive, and individualistic social interdependence. From Tables 1 and 2 it may be seen that

TABLE 1
CRONBACH ALPHA INDICES FOR EVOLVING MEASURES OF SOCIAL INTERDEPENDENCE

Study	Cooperative		Competitive		Individualistic	
	Items	Alpha	Items	Alpha	Items	Alpha
Entire school District	3	.72	3	.82	3	.74
12th grade, 1975	4	.71	4	.73	2	.62
7th grade, 1975	4	.65	8	.79	7	.80
12th grade, 1976	7	.84	8	.88	7	.84
7th grade, 1976	7	.84	8	.87	7	.84
College, 1977	7	.84	8	.85	7	.88

the internal consistency for each scale increased as the development of items for each of the constructs advanced with succeeding studies. At the completion of scale development, indices from .84 to .88 for Studies 4, 5, and 6.

Table 2 indicates that the cooperative and competitive scales are essentially independent from each other, while a negative correlation exists between the cooperative and individualistic scales (especially for the older samples) and the competitive and individualistic scales are somewhat positively related in the 7th-grade samples.

D. DISCUSSION

Three relatively independent self-report scales with substantial internal reliability were developed to measure attitudes toward cooperative, competitive, and individualistic interdependence between oneself and others in an educational setting. It is hoped that these scales will be of assistance in

TABLE 2
INTERCORRELATIONS AMONG SCALES OF SOCIAL INTERDEPENDENCE

Sample	Competitive	Individualistic
Cooperative		
Entire school district		-.32
12th grade, 1975	.02	-.21
7th grade, 1975	.68	-.21
12th grade, 1976	.11	-.48
7th grade, 1976	.00	-.28
College, 1977	-.03	-.60
	-.01	
Competitive		
Entire school district		.24
12th grade, 1975		.00
7th grade, 1975		.22
12th grade, 1976		.04
7th grade, 1976		.32
College, 1977		.04

future research on social interdependence and educational processes and outcomes as previously there has been a marked lack of such measures. The measures developed and their underlying conceptualization are aimed at American society and do not have anything approaching cultural universality.

The development of the scales provided an opportunity to examine their theoretical relationship. The results indicate that the same student may have positive or negative attitudes toward both cooperation and competition. Since both cooperative and competitive situations involve interaction with other people, it may be assumed that a person who is high on both will be a highly social person who likes to interact with others in a variety of ways, while a person who is low on both will generally be a social isolate who wishes to avoid other people no matter what the situation. The results also indicate that there is a negative correlation between the cooperative and individualistic scales. While wishing to study alone is obviously negatively correlated with wishing to study cooperatively with others, the size of the negative correlation between these two scales is not high enough to support the view that they are opposite ends of a single dimension. It is also logical that there is some relationship between the competitive and individualistic scales, as many competitive activities in schools are performed alone. The results indicate that the three types of social interdependence are not a single dimension, and further research is needed to clarify the nature of their relationship.

The results of the studies reported in this article are congruent with the position that people's conceptions of cooperative, competitive, and individualistic interdependence change as they develop cognitively and socially. The scales are more cohesive for older than for younger students, and the older students become, the greater the negative relationship between the cooperative and individualistic scales and the less the relationship between the competitive and individualistic scales. Ahlgren and Johnson (1) found that there is a reorganization of cooperative and competitive attitudes during the junior high school years. The findings in this study support such a view. Future research should clarify further the nature and process of such cognitive change.

APPENDIX

Social Interdependence Scales

a. Cooperative Interdependence.

(1). Liking to cooperate.

I like to help other students learn.

I like to share my ideas and materials with other students

I like to cooperate with other students.

(2). *Valuing cooperative learning.*

I can learn important things from other students.

I try to share my ideas and materials with other students when I think it will help them.

Students learn lots of important things from each other.

It is a good idea for students to help each other learn.

b. *Competitive Interdependence.*

(1). *Liking to compete.*

I like to do better work than other students.

I work to get better grades than other students do.

I like to be the best student in the class.

I don't like to be second.

(2). *Valuing competitive learning.*

I like to compete with other students to see who can do the best work.

I am happiest when I am competing with other students.

I like the challenge of seeing who is best.

Competing with other students is a good way to work.

c. *Individualistic Independence.*

(1). *Liking to study alone.*

I don't like working with other students in school.

I like to work with other students. (reverse)

It bothers me when I have to work with other students.

(2). *Valuing individualistic learning.*

I do better work when I work alone.

I like work better when I do it all myself.

I would rather work on school work alone than with other students.

Working in small groups is better than working alone. (reverse)

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PERSONAL AND SOCIAL COMPONENTS OF THE PROTESTANT ETHIC*

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SUMMARY

In an attempt to assess social group correlates of scores on the Meeley-Garret Protestant Ethic scale, 219 American male and female students were administered the scale, together with items dealing with religious group affiliation, ethnic self-identification, political self-identification, socioeconomic status, and religious beliefs. Results showed that for the American students, Protestant Ethic scores were related significantly to religious self-identification, ethnic background, political self-identification, and religious beliefs. They were not related to socioeconomic status. Results are interpreted as indicating that for the American student sample Protestant Ethic scores are not a "personality variable" but reflect social and cultural background elements.

A. INTRODUCTION

The Protestant ethic [PE (12)] is an orientation towards work which emphasizes dedication to hard work, deferment of immediate rewards, conservation of resources, the saving of surplus wealth, and the avoidance of idleness and waste in any form. The concept of the Protestant work ethic has been analyzed by historians, economists, sociologists, and theologians. Individual adherence to the Protestant ethic has been studied by sociologists (5), and group differences in this work orientation, especially differences among religious groups, have been used to explain group differences in occupational achievement (1, 3). The Lenski (5) thesis, which

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attributed religious group differences in achievement to differential adherence to the PE, with Catholics being lower on PE compared to other groups (and therefore achieving less) has been challenged by Schuman (11), Duncan and Featherman (3), and others (1).

Mirels and Garrett (9) were the first to conceptualize the Protestant ethic as a dispositional personality variable. They constructed a Protestant ethic scale and found that scores on this scale were positively correlated to sex guilt, authoritarianism, and internal control. Also, using the Strong Vocational Interest Blank they found that "... endorsement of the Protestant ethic values is associated with interest patterns characteristic of persons in occupations demanding a concrete, pragmatic orientation toward work" (9, p. 42). Macdonald (6), using the Mirels and Garrett Protestant ethic scale, showed that it was positively correlated with authoritarianism, conservative social attitudes, and church attendance. MacDonald (7) found that scores on the Protestant ethic scale were positively correlated with conservative political attitudes and authoritarianism.

The aim of the present study was to explore the relationship between the PE measure created by Mirels and Garrett, and social background variables, such as religious affiliation, degree of religiosity, ethnic origin, and socioeconomic status. It was expected that such relationships, if found, would shed further light on the similarity between the traditional "sociological" measures of PE and the newer psychological measure. Theoretically, the findings should help determine whether PE was a "personality" variable, independent of social background, or whether it was a reflection of cultural group traditions, as Lenski (5) has hypothesized.

B. METHOD

The respondents were 120 male students and 99 female students at two large Michigan universities, who filled out a questionnaire administered in class. The questionnaire included the following: (a) the 19-item Mirels-Garrett Protestant ethic scale (9), in which respondents rate each item on a six-point scale ranging from -3 to +3, with the zero excluded. The PE items were presented with 19 filler items. (b) Items asking the respondent to indicate his father's occupation and his own desired future occupation; political self-identification; religious beliefs, religious affiliation, and religious practices, taken from Glock and Stark (4); ethnic self-identification. The occupations indicated by respondents as their father's or their own desired occupation were assigned numerical values according to the socioeconomic Index for Occupations contained in Appendix B of Reiss *et al.*

(10). The construction and rationale of this Index are presented by its author, O. D. Duncan (2).

C. RESULTS

Scores on PE and other variables were computed separately for females ($n = 99$) and for males ($n = 120$). Since there were no significant differences on any of the main variables between males and females, the two groups were combined. Respondents were divided into nine ethnic background groups on the basis of self-identification (including white, Anglo-Saxon; white, Eastern European; white, Central European; black; Mexican-American); and a one-way analysis of variance was significant statistically with an F of 2.05 ($p < .05$). Then respondents were divided on the basis of religious self-identification to four groups of Catholics, Protestants, Jews, and nonaffiliated (means, respectively, were 7.63, 8.84, -2.81, and -1.10). A one-way analysis of variance revealed a significant relationship, with $F = 7.38$ (df 3, 204, $p < .0001$). A Newman-Keuls test for unequal N s (13), performed on the data, showed that there were no significant differences between the Protestant and Catholic groups, but that these were significantly different ($p < .05$) from the other two groups, the Jewish and the nonaffiliated.

There were positive significant correlations between the PE score and scores on the items measuring religious conventionality. The correlation with the belief item was .247 ($p < .001$), and with church attendance .169 ($p < .001$). When respondents were divided on the basis of their political self-identification into left, liberal, center, and conservative, a one-way analysis of variance (means, from left to right, 1.97, 5.30, and 13.51) revealed a significant relationship between PE and political leaning, with $F = 9.270$ ($df = 2, 205, p < .0001$). The correlations between PE scores and the Duncan socioeconomic index ratings of paternal and desired self-occupation were negligible and nonsignificant.

D. DISCUSSION

The findings seem to indicate that for the American student Ss the Protestant ethic, as measured by the Mirels-Garrett scale, is not just a "dispositional personality variable," but is related to such background variables as religious affiliation and ethnic background, and to political and religious beliefs. The correlation with socioeconomic background as such, however, was negligible. These findings point to overlooked factors in previous work with the Mirels-Garrett PE scale and shed new light on the

nature of PE as a social-psychological variable. They make it quite clear that PE as a work orientation is still a Protestant trait, though Catholics are not far behind in PE scores. It is also clear that lack of religiosity is associated with low scores on the PE. On all measures of religiosity there were positive correlations with PE.

Actually, the findings indicate quite clearly that for the Ss in the present study the gap between Catholics and Protestants on PE is being closed, as other observers of religious group differences have noticed (1). While Catholics and Protestants received high scores on the PE, Jews as a group had the lowest mean scores, and those describing themselves as agnostic and atheists the next lowest mean. Thus, there is still a connection between PE and self-identification with the major religious groups in the U.S. One might suggest that PE is part of the American core culture, and lack of conformity with the culture is associated with lower PE scores. This suggestion is supported by the extremely low scores of the Mexican American and black respondents in the sample ($n = 24$, mean PE score = 58.37). It seems that PE is tied to certain cultural traditions, most often represented by certain religious identifications. It would be far fetched to suggest any real connection between the specific content of a certain religious belief system and PE, but religion here may serve as a significant component of a wider cultural tradition. Our findings showed that being affiliated with major religious and ethnic groups, holding more conventional religious beliefs, and holding more conservative political views were all positively related to having higher PE scores. This is in agreement with the findings by MacDonald (6, 7) which showed PE to be part of a conservative attitude pattern. Being socialized into the PE attitude is part of being socialized into this general conformist pattern.

The low PE scores for Jewish respondents may raise questions regarding the nature of PE, in view of the well known levels of achievement motivation, and actual achievement, among Jews in the U.S. (1). The results may be interpreted as indicating that PE is separate from what is commonly referred to as "achievement motivation," and that PE can be more correctly regarded as an attitude toward work. The findings by Merrens and Garrett (8) are especially suggestive in this respect, as they show that high scores on PE were associated with readiness to perform repetitive work. This may be interpreted as indicating that PE may be related to alienated work rather than to actual achievement. The Protestant ethic should be regarded as an orientation toward the place of work in one's life and in society, which is related to a great extent to social background variables.

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CHILDREN'S EMOTIONAL REACTIONS TO TV VIOLENCE EFFECTS OF FILM CHARACTER, REASSURANCE, AGE, AND SEX*¹

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SUMMARY

Sixty-four American children, 32 between four and six years of age and 32 between eight and 11 years of age, were each shown two three-minute video episodes containing exactly the same series of violent acts. However, one of the violent episodes (HV) involved human actors while the other (PV) involved puppets. Each of these episodes was preceded by a third nonviolent episode [Standard (Std)]. The results clearly indicated that HV was judged to be "scarier" than PV. Girls also reported being more scared by both episodes, particularly HV, than the boys. Verbal reassurance proved effective in reducing the HV and PV scariness ratings made by the older children. However, with the younger children, reassurance entered into a complex interaction with the orders of presenting the two episodes. Heart rates also dropped significantly during the violent episodes, particularly during the periods of greatest violence. Finally, significant decrements in heart rates to HV occurred, regardless of whether it preceded or followed PV, while the decrement to PV occurred only when it preceded HV.

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¹ The present study was based on a dissertation submitted by the first author in partial fulfillment of the requirements for the Doctor of Education degree at the University of Georgia. The second author, who along with Dr. D. K. Osborn co-chaired the dissertation committee, was responsible for preparing the manuscript for publication. Thanks are due to the staff members and children of the Memorial Park Recreation Program and the McPhaul Child and Family Development Center, University of Georgia, Athens, Georgia, for their cooperation, as well as to Mr. Michael Martin for his assistance as one of the experimenters. An earlier version of this paper was presented at the biennial meeting of the Society for Research in Child Development, Denver, Colorado, April, 1975. Reprints may be obtained from either author (addresses are shown at the end of this article).

A. INTRODUCTION

The present study was based largely on an earlier one by Osborn and Endsley (8) in which preschool American children expressed more fear (as indexed both by palmar sweating and verbal "scariness" ratings) when viewing televised violence involving human actors than when viewing violence portrayed by cartoon characters. However, because the violent episodes in the Osborn-Endsley study differed in other respects besides whether or not the characters were human or cartoon drawings, it was difficult to conclude that the use of cartoon characters, *per se*, had moderated the emotional impact of the TV violence on the children (10).

Therefore, the first purpose of the present study was to re-examine children's verbal expressions of fear to a violent TV episode involving human actors in contrast to the same episode involving cartoon-like puppet characters. The comparison was made under conditions where content variables, such as the number of characters, the character roles, the number of violent acts, and the type of violence expressed, were held constant. Given the suggestive findings by Osborn and Endsley, it was predicted that children would verbally express being less frightened by violent puppet characters than by violent human characters.

Based on *post-hoc* observations, Endsley and Osborn (2) also reported that verbally reassuring the few children who appeared to be visibly upset by the human violence episode seemed effective in allaying their distress. The effectiveness of altering emotional reactions to media events through instructional sets is more firmly documented by Lazarus and Opton (6) who demonstrated that emotional (physiological) responses of adults watching a film on circumcision rites could be reduced by an accompanying account which de-personalized the painful features of the rites. Therefore, the second purpose of the present study was to determine whether efforts to modify children's perception of the reality of the viewed episodes through verbal reassurance that the events in the episodes did not "really happen" would reduce the emotional impact of the violent episodes. More specifically, it was predicted that children who were reassured just prior to and just after the acts of major violence would state that they were less frightened by the episodes than would children not receiving the same verbal reassurance.

The third purpose was to determine whether the degree of emotional impact attributable to visual and instructional alterations in the apparent reality of the episodes would vary with the children's age. Developmentalists have attempted to analyze the stages and processes by which

children construct a model of reality (e.g., 9) and therefore at least some research linking fearfulness in young children to their inability adequately to differentiate real events from fantasy (impossible events, e.g., 11). We assumed that school age children, in contrast to preschool children, could more readily distinguish the fantasy character of any TV episode from actual threatening events, as well as from other more realistically portrayed episodes. Consequently, we expected that younger children would express more fear to one or both episodes than would older children. However, no attempt was made to predict the precise nature of the age effect, since we did not know the extent to which the two age groups would respond differentially to either the visually presented character alterations, the verbal reassurance, or to both.

The final purpose of the present study was to explore the usefulness of heart rate as an indicant of the children's responsiveness to the televised violence and reassurance treatments. We were interested in tracking the children's heart rate during the violent episodes to learn whether the moments of greatest change in heart rate would correspond with the most violent actions occurring in the episodes. We were also interested in discovering the extent to which changes in heart rate during the episodes would corroborate our measure of the children's verbally expressed fear obtained immediately after the episodes had been presented.

However, given the exploratory nature of our heart rate procedures, we were not prepared to predict what (if any) pattern of findings might be reflected in our heart rate data. First, though momentary heart rate increases and decreases (in response to experimental stimuli) are often assumed to reflect increased attentiveness and anxiety, respectively, the meaning of bidirectional changes in heart rate is far from settled (e.g., 3). Second, for reasons of convenience and reliability, we opted for measuring general shifts in heart rate over relatively large time intervals (successive 30-second periods—see Methods) containing several heart beats, rather than assessing momentary heart rate change from beat to beat as do most investigators (e.g., 11). This methodological deviation made us even more uncertain about what pattern of heart rate change might occur to our violence and reassurance conditions.

B. METHODS

1. Subjects

Sixty-four Ss participated in the study: 32 "younger" children who ranged from 3.5 to 5.5 years of age and had a mean age of 4.8 years, and

32 "older" children who ranged from 8.4 to 11.3 years of age and had a mean age of 10.1 years. The younger children were selected from a university laboratory school containing both a traditional preschool program and a Model Cities day care program, while the older children were selected from a summer recreation program operated in a local community park. Both groups were ethnically and socioeconomically heterogeneous, particularly the group obtained from the university laboratory school, which by virtue of its Model Cities program included several poverty families along with the usual number of professional families typically found in university preschool programs.

Each age group contained 16 girls and 16 boys, all of whom had been judged by their supervisors to be of at least normal intelligence and free of any physical or emotional handicaps that would hinder their participation in the study. After conferring with the first author, who explained the laboratory procedure and described the video episodes in about the same detail as presented in this paper, the parents of each of the 64 children gave their written consent for their children to participate in the study. The parents of eight other children, seven of whom had children in the younger age group, declined to give their consent.

2. *Apparatus and Video Episodes*

The apparatus included a (Narco Bio-systems) biotelemetry system for measuring and recording the children's heart beats and a closed circuit (Sony) television system to present a series of three-minutes video episodes on a TV monitor. Each child individually viewed the following episodes.

(a) Two Standard (Std) episodes—each consisting of the same young woman singing children's songs and playing a guitar.

(b) Human Violence (HV) episode—consisting of a middle-aged woman, referred to as "Aunt Pat," reading a rather gory version of the *Three Billy Goats Gruff* as a bedtime story to her seven-year-old niece, "Julie," during the first one and one-half minutes of the episode. Following the story, "Aunt Pat" assures the child, who appears frightened by the story, that the story was only pretend and leaves to get a glass of water requested by the child. While she is gone, and with about one minute left in the episode an intruder (a shabbily dressed middle-age man) enters the bedroom and attacks "Aunt Pat" upon her return. After a brief struggle the intruder strangles "Aunt Pat" and begins to menace "Julie" who is trying to dial the telephone for help as the segment ends.

(c) Puppet Violence (PV) episode—consisting of exactly the same episode

described above and using the same soundtrack. However, instead of human actors, puppet-like hand puppets were employed. "Aunt Pat" was represented as a dark grey dog with a large mouth and red tongue, niece "Julie" as an innocent-looking white rabbit with pink floppy ears, and the intruder as a snake-like figure with a row of large white teeth.

While the episodes did not have the professional quality of a studio production, the visual and auditory clarity of the tapes were judged to be excellent, and the actors, themselves professional puppeteers, were judged to be convincing.

3. Procedure

Each child was carefully familiarized with the equipment and room by two *Es* (one male and one female graduate student, each in their twenties) prior to showing the video episodes. The children first visited the experimental room, which simulated a living room, in small groups while the *Es* demonstrated on themselves how the apparatus recorded their heart beats. Each child then returned a few days later by him/herself, at which time the female *E* read a story appropriate to the child's age for about 15 minutes while the male *E* monitored the child's heart beats. The child was told that the "heart rate machine" helped the *Es* determine how well the child enjoyed seeing and hearing stories.

After the story, the older children were immediately introduced to the TV episodes. The younger children returned to view the episodes during a third session after having been promised at the end of their story-familiarization session that they would come back the next day to see some TV "movies." The second familiarization period and the testing period were broken into two sessions for the younger children in order to insure that they would be as comfortable with the situation as possible, and as interested in the TV episodes as the older children appeared to be during session two.

Within each of the age \times sex \times episode order subgroups, half of the children were reassured twice, once just before the intruder entered the bedroom, and once just after the strangling scene in both HV and PV. Reassurance consisted of the *E* stating, "What you are seeing is just pretend; it didn't really happen." The order of viewing the episodes and the reassurance treatments were randomly assigned to the 16 children within each age-sex subgroup, yielding a design balanced for age, sex, reassurance, episode order, and episode character (HV, PV).

The children's heart beats were continuously recorded on calibrated

print-out paper which ran through the electrocardiograph pen and-ink recorder. Given the unavailability of a cardiometer and the inability to link specific moments in the video episodes to specific heart beats, it was decided to obtain a measure of heart rate for major time periods during the episodes that was both easily and reliably obtained. Thus, it was decided simply to count the number of maximum upward deflections of the pen (evidence of the heart muscle's contraction) which occurred during successive 30-second periods in the four video episodes. A spot check of the records from five children revealed that two scorers were in perfect agreement regarding the number of beats that they counted during each 30-second period.

Immediately after the final episode the female *E* led each child into an adjoining room and asked a series of questions about the three different episodes that he/she had just seen (Std, HV, PV). To facilitate communication between the *E* and the child regarding the episode to which both referred, three 20.4 × 25.4 cm (8 × 10 in.) photographs, each containing the characters of a particular episode, were arrayed in front of the child.

The first three questions took the following general form: (Questions 1-3) *How "scary" was this film* (*E* pointed to the appropriate photograph—*very scary, a little scary, or not scary?* Care was taken to insure that both the order of arraying the photographs in front of the child and the order of episodes referred to in questions 1-3 were randomly determined for each child.

The next two questions were as follows: (question 4) *Which film did you think was the scariest?* (question 5) *Which film did you like best?* As the *E* presented each of these questions, she pointed to the three photographs in an order that had been randomly predetermined for each child. The child indicated his/her choice of episode by pointing at the appropriate photographs and/or nodding agreement when the *E* pointed at a given photograph.

C. RESULTS

1. Scariest Episode Ratings

As predicted the children overwhelmingly judged HV to be the scariest episode. Specifically, in response to question 4, 59 chose HV, five chose PV, and only one chose Std as the scariest episode. Further, based on their responses to questions 1-3, the mean scariness ratings for HV, PV and Std were 2.1, 1.6, and 1.0, respectively, on a three-point scale were 1 = *not*

scary, 2 = a little scary, and 3 = very scary. A Friedman two-way analysis of variance revealed that these ratings of the three episodes were significantly different, $\chi^2(2) = 42.24$, $p < .01$, and follow-up analysis via the sign test demonstrated that HV was rated significantly more scary than PV, and PV as significantly more scary than Std (both p 's $< .01$).

A five-way analysis of variance was also performed on the children's three-point scariness ratings of the two violent episodes, in which episode type (HV, PV) was a within-Ss factor and age, sex, reassurance, and episode order (HV-PV, PV-HV) were between-Ss factors. Six significant effects were obtained as follows: episode type, $F(1/48) = 27.86$, $p < .01$; sex, $F(1/48) = 5.41$, $p < .05$; sex \times episode type, $F(1/48) = 4.95$, $p < .05$; age \times reassurance, $F(1/48) = 6.63$, $p < .05$; reassurance \times episode order, $F(1/48) = 6.63$, $p < .05$; and age \times reassurance \times episode order, $F(1/48) = 4.54$, $p < .05$.

Inspection of the means and follow-up one-way analysis of the sex \times episode type interaction indicated that while both boys and girls judged HV to be scarier than PV, both F 's $(1/48) = 4.86$, both p 's $< .05$, the girls' scariness judgments were significantly higher than the boys' only on HV, $F(1/48) = 7.87$, $p < .01$. The mean scariness ratings by the boys and girls on HV and PV, respectively, were as follows: boys—1.9 and 1.6, girls—2.4 and 1.7.

Follow-up two-way analyses of the triple interaction involving age, reassurance, and episode order also revealed that the reassurance treatment had the expected effect of lowering scariness ratings among the older children, though the effect was significant only at the .06 level, $F(1/48) = 3.92$. However, among the younger children reassurance interacted with episode order, $F(1/48) = 9.19$, $p < .01$. Inspection revealed that the young children who had viewed HV first and PV second also behaved as predicted in rating both episodes less scary if they had been reassured than if they had not been reassured. However, the opposite pattern emerged among the younger children viewing PV first and HV second, namely, they rated both episodes as *more* scary if they had been reassured than if they had not been reassured.

2. Best Liked Episode Ratings

Twenty-nine children indicated that they liked HV the best, 28 that they liked PV the best, and five that they liked Std the best. Two younger children also selected HV and PV as "best liked" even though they were asked to select only one of the three episodes. Thus, it is evident that while

both violent episodes were clearly preferred over Std, neither the human actor nor the puppet versions were preferred over the other. Further, partitioning the sample on the basis of age, sex, reassurance, and episode order conditions failed to yield any significant differences in the proportion of children preferring one of the violent episodes over the other.

3. Heart Rate

Heart rate measures (beats per minute) were obtained by multiplying the number of beats recorded each 30 seconds by 2. The heart rate obtained during the last 30 seconds of the first Std episode was treated as a baseline measure, and it was subtracted from each of the 18 subsequent 30-second heart rates obtained over the remaining three episodes (six from each episode).

a. *Age differences in baseline heart rate.* A two-way analysis of variance, using age and sex as between-Ss factors, revealed what was obvious from inspection: namely, that the baseline heart rates for the younger children were significantly higher than those for the older children $F(1/60) = 26.84$, $p < .01$. On the other hand, there were no significant differences in baseline heart rates between the boys and girls. The mean baseline rates for the four age \times sex subgroups were as follows: younger boys = 102.5; younger girls = 103.0; older boys = 87.9; and older girls = 90.5.

b. *Changes in heart rates during the video episodes.* As indicated in Figure 1, heart rates appeared to drop for both HV-PV and PV-HV order groups during the initial violent episode, rise again to the initial baseline level during the ensuing Std episode, and drop again for the PV-HV order group only during the second violent episode. A one-way repeated measures analysis of variance revealed a significant effect for time intervals for all children during the first violent episode $F(5/315) = 4.06$, $p < .01$. Selected follow-up analysis employing Dunn's Multiple Comparison Procedure (5) indicated that the children's heart rates dropped significantly from baseline during the first 30 seconds when "Aunt Pat" began reading the *Three Billy Goats Gruff*, and dropped significantly further from the third to the sixth 30-second interval, which was the period when the intruder entered the bedroom, strangled "Aunt Pat," and began to menace "Julie" (both $ps < .05$).

c. *Changes in heart rate due to episode character.* A five-way analysis of variance was also performed on the change in heart rate data from baseline to the last 30-second interval of each violent episode (the period of greatest violence). As with the five-way analysis of the scariness rating data, the

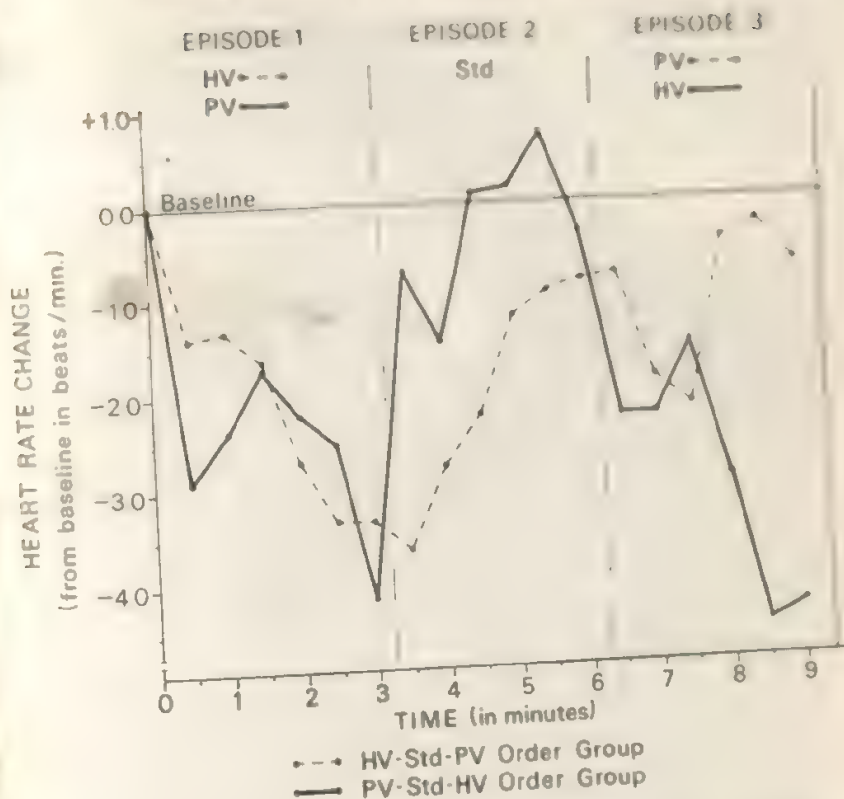


FIGURE 1
MEAN CHANGE IN HEART RATE OVER THE THREE FILM EPISODES FOR SUBJECTS
IN THE TWO EPISODE ORDER GROUPS ($N = 32$ per Group)

within-Ss effect was episode character (HV, PV), while the between-Ss effects were age, sex, reassurance, and order of presenting the video episodes (HV-PV, PV-HV).

The analysis revealed no significant main effects and only one significant interaction effect: that involving episode order and character, $F(1,48) = 9.64$, $p < .01$. Inspection of the children's performance at minutes 3 and 9 in Figure 1 and follow-up analysis of the significant interaction revealed that the drop in heart rate from baseline to the end of the episode was similar regardless of whether the children saw it first or last. On the other

hand, the drop in heart rate at the end of PV was significantly greater among the children who saw it first as compared to last, $F(1/48) = 5.19$, $p < .05$. Correspondingly, there was a significantly greater drop at the end of HV than the end of PV among the children in the HV-PV order group, $F(1/48) = 7.69$, $p < .01$, but not in the PV-HV order group.

D. DISCUSSION

1. *Ratings of Scariest and Best Liked Episodes*

The results provide convincing evidence for our prediction that children would verbally express being less frightened by violent puppet characters than by violent human characters. Moreover, the "best liked episode" data indicated that reducing an episode's "scariness" through the use of puppets did not simultaneously reduce the episode's appeal.

There was also some support for our prediction that verbal reassurance which emphasized the "pretend" aspects of the violence reduced the children's fear of the violent episodes, though a consistent reassurance effect was obtained only among the older children. The contrary reactions of the younger children in the two episode order groups to the reassurance treatments is perplexing, indeed. While no obvious account is available, we offer the following *post hoc* speculations:

(a) Rather than providing them with a cognitive coping technique as intended, the reassurance procedure may instead have strengthened the younger children's expectation that something frightening was about to happen (much as a doctor might unwittingly frighten a young patient by prefacing an injection with the statement, "This won't hurt much.").

(b) When the "reassured" younger children saw HV, their expectations of being "scared" were strongly confirmed, while "reassured" younger children seeing PV had their "scariness" expectations disconfirmed.

(c) In comparison with the older children, the younger children's judgments of both episodes were rather strongly influenced by which episode they had seen moments before. Thus, "reassured" younger children just experiencing a relatively high degree of fear arousal from HV, would tend to overrate the "scariness" of the earlier PV episode. Conversely, "reassured" younger children just experiencing little fear arousal from PV would tend to underrate the "scariness" of the earlier HV episode.

The unusual pattern of findings involving age, reassurance, and episode order, combined with the nonsignificant main effect of age and nonsignificant age \times episode interaction provide little support for our prediction

that the younger children would express more fear toward one or both episodes than would the older children. Nevertheless, consistent with our prediction, there was a (nonsignificant) trend for the younger children to rate both HV and PV as scarier (e.g., five younger children but no older children judged PV to be *very scary*; similarly 17 younger children but only nine older children judged HV as *very scary*).

In addition to our speculations regarding the unusual episode order \times reassurance effects among the younger children, at least two other reasons could be advanced which may have reduced the size of our predicted age effects. First, it is possible that the different pattern of scheduling familiarization and testing sessions for the two age groups may have worked against our prediction by rendering the younger children even less anxious with the testing situation (therefore rating the episodes as less scary) than the older children. Second, there is evidence that older children are more willing to admit being afraid than are younger children (4).

The sex differences, while not predicted, appear somewhat more interpretable than the findings regarding age (and its interactions with episode order and reassurance). First, the higher scariness judgments by the girls may reflect the fact that girls are apparently more willing to admit being fearful than are boys (4). However, we favor the interpretation that the girls were in fact more frightened than were the boys because the victims in the episodes ("Aunt Pat" and "Julie") were both female, and the girls were thus more identified with them than were the boys (7). Supporting this interpretation is the finding that the girls were expressing more fear than the boys towards HV but not towards PV, and it was only in HV that the victims were clearly presented visually as females ("Aunt Pat" and "Julie" were dog and rabbit muppets in PV).

2. Heart Rate Findings

Despite our earlier caveats regarding the meaning of heart rate changes, the heart rate measure did drop significantly during the violent episodes, particularly during the moments of greatest violence. Given the view that heart rate deceleration reflects increased attentiveness, we may conclude that the children were more attentive to the two violent episodes than to Std. Unfortunately, we had no independent measure of attentiveness, but it was our distinct impression that the children were more "glued" to the monitor during the HV and PV episodes than during Std, particularly when the strangling scene occurred.

While the heart rate did appear to reflect the greater interest the children

had in the two violent episodes, it did not yield any age, sex, or reassurance results that paralleled those found for the scariness rating data. Perhaps such parallelism would have appeared if, through beat-by-beat analyses, momentary heart rate accelerations, thought by some investigators to index fearfulness, could have been detected.

While age, sex, and the reassurance treatments were not significantly related to changes in heart rate during the violent episodes, there was an interesting pattern of heart rate change involving the episodes and their order of presentation. Specifically, heart rate dropped when viewing the strangling scene in HV, regardless of whether it was preceded or followed by PV; however, heart rate dropped when viewing the same scene in PV only when PV preceded HV. If heart rate decrements indicate increased attentiveness, then the question can be raised as to why HV retained its attention-recruiting value while PV did not. This question may be answered by assuming that (a) there were at least two sources of attention-recruiting value involved in the violent episodes; (b) either source was sufficient to recruit (full?) attention when first presented; and (c) habituation of attention to either source would occur with repeated exposure (6).

More specifically, it might be assumed that the attention-recruiting value of the episodes' content (e.g., value of the characters' words and actions) is a source common to both episodes, while the scariness of the episodes is a second source found in greater degree in HV (because of the greater realism of its characters). During first exposure, either the content source or scariness source would by itself be sufficient to recruit attention. However, repeating the same content in a second episode should result in reduced attentiveness, *unless* a second attention-recruiting factor (scariness) is added, as is assumed to the case in the PV-HV sequence but not the HV-PV sequence.

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THE EFFECTS OF SOCIAL, SPATIAL, AND INTERFERENCE DENSITY ON PERFORMANCE AND MOOD*

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SUMMARY

The present experiment independently manipulated three components considered important aspects of crowding. In a $2 \times 2 \times 2$ design, 192 white male American undergraduates were assigned to either a high- or low-social-density, high- or low-spatial-density, or high- or low-interference-density condition. Ss were given an opportunity to perform a box-building task in addition to a cognitive task. Various measures of mood were also collected during the study. Results indicated that interference density did affect both task performance and mood either alone or in combination with the other measures of density.

A. INTRODUCTION

Many laboratory studies have been concerned with the effects of crowding on human behavior in Americans. The most common definition of crowding has been population density. This term, however, can be operationally defined in a number of ways itself. Some researchers have varied room size, keeping group size constant (spatial density), while others have varied group size and held room size constant (social density). What is most disturbing is that neither of these manipulations produces *consistent* effects or different effects for the opposite sexes (1). Others find effects for spatial density (4), social density (3), or both (6). It is becoming increasingly apparent that population density should be viewed as a "necessary but not always sufficient" component of crowding. Recently a group of researchers has proposed another component that may just suffice: Heller, Groff, and

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Solomon (2) manipulated both room size (spatial density) and amount of interaction between Ss. Groups of six to eight Ss were placed into a small or large room and asked to perform a series of tasks. In order to complete the task, half of the Ss were required to interact physically (high-interaction condition), while the remainder were allowed to work without any physical interaction (low-interaction condition). On two different measures of task performance, Ss in the high-interaction, high-density condition made significantly more errors than the Ss in any of the other conditions. Perceptions of crowding were high in all groups with the exception of the low-interaction, low-density group. It appears that either density or interaction are sufficient components to affect perceptions of crowding, but only in combination are they sufficient to affect task performance.

The present authors feel that an integral and potentially disruptive component of crowding is not merely physical interaction, but is, instead, interference. One can physically interact without interfering with others present. We feel that Heller *et al.* (2) did, in fact, manipulate interference, not merely interaction.

The present study was undertaken in order to test for the effects of all three components of crowding proposed above. A $2 \times 2 \times 2$ factorial was designed in which social density, spatial density, and degree of interference were manipulated. Both task performance and a series of affective responses were of interest. It was predicted that high interference alone or in combination with the other independent variables would cause a decrement in task performance, concentration, social affection, vigor, and elation, as well as an increment in feelings of aggression and anxiety.

B. METHOD

Ss were 192 male undergraduate students who participated in the experiment in exchange for points toward their final grade. The Ss committed themselves to participate for two hours.

Ss were divided into 16 groups of nine and 16 groups of three in order to manipulate social density. For spatial density, half of the groups were tested in rooms which allowed 16 square feet per S, while the other half of the groups were allowed 46 square feet per S. Interference was manipulated by providing the group with either one set of materials (scissors and glue) necessary to complete a box-building task for every three Ss in the group or one set of materials for each S.

As soon as all Ss had arrived, the E distributed one package to each. Each package contained a copy of a letter explaining the instructions and

14 dittoed outlines of different sized boxes. Ss were instructed *exactly* how to build their boxes, and were told that they would be given 10 minutes to do so and that each box must be completely completed because the maximum of four would allow the S to finish the experiment five minutes earlier. They were told there would be two such box building sessions, each followed by sessions in which other tasks would be performed. Ss performed these tasks under the guise of testing new procedures for later research.

After 20 minutes the *E* returned to the experimental room and handed each S a copy of a Remote Associates Test (RAT). Ss were allowed 10 minutes to work on this task. Another 20-minute box building session followed and then, finally, a mood adjective checklist (S) was administered. Once this was completed the *E* tabulated the number of boxes each S had completed, then debriefed and dismissed them.

C. RESULTS

1. Task Performance

The ANOVA for the Remote Associates Test indicated a marginally significant main effect for social density ($F = 4.00$, $df = 1, 24$, $p = .05$). Ss in the high-social-density conditions were able to complete more remote associates than those in the low social density conditions. No other main effects or interactions approached significance.

2. Mood Adjective Checklist

a. Aggression. As predicted, Ss in the high interference conditions felt more aggressive than Ss in the low interference conditions regardless of social and spatial density ($F = 6.21$, $df = 1, 24$, $p = .02$).

b. Anxiety. As with aggression it was predicted that interference would cause an increase in anxiety. No such effect was found. However, a significant interaction between social and spatial density did reach significance ($F = 5.88$, $df = 1, 24$, $p = .025$). High spatial density resulted in greater anxiety in small groups, while low spatial density resulted in greater anxiety in large groups. Three people in a small room felt more anxious than three in a large room. However, nine Ss in a small room felt less anxious than nine in a large room.

c. Vigor. A main effect for social density indicated that high social density lead to increases in reported vigor ($F = 4.50$, $df = 1, 24$, $p = .05$). Furthermore, the three-way interaction revealed significance ($F = 4.76$, $df = 1, 24$, $p < .05$). As predicted vigor decreased when interference in-

creased in six of the eight conditions. However, for the high social low-spatial density conditions the opposite trend was observed.

d. Elation. A significant interaction between spatial density and interference was found ($F = 4.93$, $df = 1, 24$, $p < .05$). This interaction indicated that under conditions of high spatial density, high interference did in fact lead to decrements in elation. However, under low spatial density just the opposite was found.

e. Concentration and Social Affection. No significant effects were found on either of these dependent measures.

D. DISCUSSION

An examination of the task performance data indicates that Ss in groups of nine performed better than those in groups of three. One possible explanation for such an effect is that of social facilitation. Data in support of this explanation are available. First, Ss in larger groups reported greater feelings of vigor than those in the small groups ($p < .05$). Second, a similar, though nonsignificant, trend was found for concentration ($p < .10$). Whatever the intervening variable, it should be noted that interference, the proposed variable of central importance, had no effect. One problem with the present design was that the performance measure, an individual cognitive task, was not performed simultaneously with the interference manipulation. Ss interfered only during the box-building sessions. It is quite possible that interference is of importance only during the immediate setting. In order to examine this possibility, the authors analyzed the performance data collected during the actual interference. An ANOVA on the box-building data indicated a trend toward a decrement in performance under high-interference conditions regardless of social or spatial conditions ($F = 3.53$; $df = 1, 24$; $p < .08$). No other effects approached significance. It appears that interference may very well have had an effect if not on subsequent behaviors then on concurrent ones.

With reference to the affective response data, it should be noted that these responses were also collected subsequent to the interference manipulations. In line with the argument stated above, the effects due to interference may be diminished. Nevertheless, high interference did, in fact, lead to greater feelings of aggression regardless of social- or spatial-density conditions. Furthermore, vigor and elation were affected by interference in combination with one or both of the other density variables. Only for anxiety were significant results reported that did not involve the interference manipulation.

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AN ANALYSIS OF POWER IN A WORK SETTING*

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SUMMARY

After Kipnis *et al.*, it was hypothesized that superiors who believe they employ strong means of influence attribute the behavior of their subordinates to that influence, devalue the contributions of their subordinates, and increase the social distance between themselves and their subordinates. Also, the effects of superior power from the viewpoint of the subordinate were assessed. With the use of different measures of power, attribution, and performance from Kipnis *et al.* and a sample of 77 female and male American nurses, it was found that superiors who perceive themselves to be relatively powerful report a greater social distance from their subordinates than less powerful superiors. Kipnis *et al.*'s other findings generally were not replicated. Examined subordinate reactions were shown to be minimal. The limitations of the study and the need to further explore the role of superior power in work settings are discussed.

A. INTRODUCTION

The work of several authors suggests that superiors who believe they employ strong means of influence attribute the behaviors of their subordinates to that influence rather than to the subordinates themselves (e.g., 3, 4, 7, 9, 14, 19, 24). Further, findings indicate that these superiors tend to devalue the contributions of their subordinates and to increase the social distance between themselves and their subordinates (4, 12, 14, 21, 22, 23). Kipnis (15) collectively labeled these three phenomena the metamorphic effects of power.

Recently Kipnis, Castell, Gergen, and Mauch (16) examined the above propositions in two field settings. In particular, in housewife-maid dyads

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¹ Requests for reprints should be sent to the first author at the address shown at the end of this article.

they found that supervisors who reported frequent use of a strong means of influence were less likely to attribute satisfactory job performance to the maids' own motivation to do well than were others. These supervisors also reported that when satisfactory job performance was obtained it was due to their close supervision of the subordinate (a strong means of influence). Among those supervisors who perceived the subordinate's performance to be dependent on close supervision, subordinate's ability was rated poorly. When satisfactory performance was attributed to the subordinate's own motivation, supervisors rated the subordinate's ability highly. Moderate support was found for the proposition that supervisors providing close supervision tended to perceive relatively great social distance between themselves and the subordinate.

The Kipnis *et al.* (16) study is incomplete in that the focus of the investigation was on the superiors' reactions to their exercise of power. One purpose of the present study, therefore, is to examine the effects of power from an additional viewpoint, that of the subordinate. From the superior's perspective, it is predicted that the more powerful the superior perceives him/herself to be, (a) the more the superior attributes the cause of subordinate job behaviors to extrinsic rather than intrinsic outcomes, (b) the more socially distant the superior will report being from the subordinate, and (c) the more the superior will devalue the subordinate's job performance. From the subordinate's perspective, it is predicted that the more powerful the subordinate perceives the superior to be, (a) the more the subordinate will attribute the cause of his/her job behaviors to extrinsic rather than intrinsic outcomes, (b) the more socially distant the subordinate will report being from the superior, and (c) the less satisfied the subordinate will be with his/her job.

This paper reports on a test of the above hypotheses among a sample of registered nurses and their immediate superiors.

B. METHOD

1. Sample

The sample used was 210 registered nurses in the State of Iowa. The sample was randomly drawn from the population of all registered nurses reporting to the Iowa Board of Nursing that they were employed fulltime as general duty nurses in a hospital. One hundred twenty-two nurses responded to a mailed questionnaire for a response rate of 56 percent. The respondents were asked to identify their immediate superiors. Those

superiors were also subsequently mailed a questionnaire. Seventy-seven supervisors responded for a response rate of 63 percent.

2. Measures

Perceived superior power was measured by a four-item instrument. Nurses and their superiors were presented with two positive job behaviors (e.g., for nurses, "Because of an unusually heavy amount of work in your area, you voluntarily work through your lunch hour and after hours for several days") and two negative job behaviors (e.g., for nurses, "You arrive at work late for the second time in a week"). Following each hypothetical job behavior, respondents were asked to indicate how frequently their immediate superior (or for superiors, how frequently the subordinate) would engage in each of approximately 20 reactive behaviors. Embedded in each list of reactive behaviors was the item, "Says and does nothing about the incident." The item was gauged on a five-point Likert-like scale from 1 (would never occur) to 5 (would always occur). Responses were summed across the four incidents and reversed. Thus, high scores on the power instrument are indicative of a superior who reacts to subordinate behaviors (e.g., promises, rewards, threatens, or punishes) and low scores are indicative of a superior who exercises little power. The degree of convergence between superior and subordinate scores within dyads was statistically significant ($r = .32, p \leq .01$). Further, principal components analyses for superior and subordinate responses to the four items each yielded only one factor with an eigenvalue greater than one.² Finally, the coefficient alpha [Cronbach (8)] estimates of internal consistency reliability for superiors ($\alpha = .63$) and subordinates ($\alpha = .65$) are acceptable for an instrument in early stages of development [*cf.* Nunnally (17)].

Attribution of motivation was measured by a scale consisting of 25 forced-choice items *cf.* (2). Respondents were required to choose between an extrinsic outcome (e.g., pay raise, job security, or promotion) and an intrinsic outcome (e.g., giving help to others, personal growth and development, or offering good service) as the dominant cause of own (or, for superiors, subordinate) job behaviors. High scores represent attribution to intrinsic outcomes and low scores to extrinsic outcomes. According to Brief and Aldag (6) extrinsic outcomes are by definition regulated by the employer. Therefore, a negative, significant relationship is expected between the power indices and the attribution scores.

² The factor matrices with eigenvalues are available from the first author upon request.

Social distance was measured by a five-item scale developed by Korman *et al.* (16). Items, relating to frequency of lunching or dining together and talking about various matters, were each gauged on a four-point scale ranging from 1 (daily/often) to 4 (rarely). Within dyads, the correlation between superior and subordinate ratings of social distance was significant ($r = .43, p \leq .001$).

Superiors evaluated subordinate job performance along five dimensions with an instrument developed by Flanagan, Gorham, Lichtenstein, and Marchese (10) which is reported on by Gorham and Lichtenstein (11). The five dimensions are (a) improving patients' adjustment to hospitalization or illness—explaining condition or treatment, helping the patient in relieving emotional tensions, and teaching patient self-care, (b) promoting patients' comfort and hygiene—providing physical care, (c) contributing to medical treatment of patient—carrying out medical orders, initiating medical procedures, reporting on patients' condition, and using and checking operation of apparatus; (d) arranging management details—scheduling patients' treatments, directing the work of nonprofessional personnel, maintaining general supplies, referring patients to nonmedical sources, and supervising visitors, and (e) personal characteristics—behaving in a warm, friendly, and professional manner.

Subordinate overall job satisfaction was measured by the Brayfield and Rothe (5) Job Satisfaction Index (JSI). The psychometric characteristics of the JSI are favorably evaluated by Robinson, Athanasiou, and Head (20).³

C. RESULTS

Superior perceptions of power are seen to be unrelated to the superior's attributed causes of subordinate job behavior ($r = .00$). Perceptions of superior power and social distance from subordinate were significantly positively correlated ($r = .21, p \leq .05$) as hypothesized. Superior perceptions of power were unrelated to three ($\bar{r} = -.01$) of the five dimensions of subordinate performance. Superior perceptions of power and the promotion of patients' comfort and hygiene dimension of subordinate performance were significantly negatively correlated ($r = -.38, p \leq .01$) as hypothesized. Surprisingly, however, superior perceptions of power were significantly positively correlated ($r = .28, p \leq .05$) with the personal characteristics dimension of subordinate performance.

³ A table presenting the means and variances for all variables, as well as intercorrelations between variables, is available from the first author upon request.

From the subordinate's perspective, the subordinate's perceptions of superior power were unrelated to the subordinate's own attributions ($r = .06$), reported social distance from superior ($r = .01$), and job satisfaction ($r = .17$).

D. DISCUSSION

It was found for the current sample of American hospital nurses that superiors who perceive themselves to be relatively powerful report a greater social distance from their subordinates than do those who see themselves as less powerful. This finding replicates that of Kipnis *et al.* (16). As was the case with Kipnis *et al.*'s finding, however, the current result indicates only a small portion of the variance in social distance is explained by the power variable. Thus, one must question the practical significance of the detected relationship. Further, both sets of findings obviously are limited to the cultural context in which they were found.

In general, the findings of Kipnis *et al.* (16) regarding the relationships between superior's perceptions of own power and (a) attributions regarding the causes of subordinate job behavior or (b) evaluations of subordinate's job performance were not replicated. Kipnis *et al.*'s measures of power, attribution, and performance were markedly different from those employed in the current study. For instance, Kipnis *et al.* used a five-item overall evaluation index to ascertain the housewives' judgments of their housemaids' performance. In the current study, five dimensions of nurse performance were evaluated with a 70-item scale of known psychometric quality (10). The failure fully to replicate the Kipnis *et al.* findings, therefore, may be due to methodological differences between the studies. Alternatively, however, it may be the case that the metamorphic effects of power are not as pervasive as is frequently assumed. Clearly, the conflict created by the current findings calls for additional attempted replications of the Kipnis *et al.* study.

From the subordinate's perspective, perceived superior power was shown not to be associated with subordinate attributions regarding own job behaviors, perceived social distance from superior, or job satisfaction. The measure of power used in the current study directly tapped whether or not the superior was exercising any form of power at all rather than gauging perceived extent of use of particular power bases. It is possible that measures of either reward and/or punitive power would have been individually related to the variables investigated. For example, several researchers have demonstrated that subordinate behavior can be successfully shaped

by increasing or appropriately manipulating reward/punishment contingencies of the situation. The results of such studies compared with the present findings suggest that investigators should consider both the type of power exercised and the absolute extent of power used.

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CROSS-CULTURAL NOTES

Under this heading appear summaries of studies which, in 500 words or less, provide comparable data from two or more societies through the use of a standard measuring instrument; additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfiche Publications.

The Journal of Social Psychology, 1979, 109, 297-298.

THE RELATIONSHIP BETWEEN AUTHORITARIAN BEHAVIOR AND SELF-ESTEEM*

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Persons scoring high on the authoritarianism (F) scale have been shown to be low in self-esteem; the general characteristic reaction of the authoritarian to his environment may stem from his feelings of personal insecurity.¹ Boshier, for instance, determined the relationship between conservatism and the Bills index of adjustment and values among 40 students in New Zealand and found the correlation to be negative, suggesting that persons who are "high" in conservatism have a low self-concept. Orpen,² on the other hand, has argued that in South Africa with its "conservative" climate where "liberal" views are strongly disapproved of, authoritarians may exhibit high self-esteem. For example, he found that among English-speaking scholars a positive significant relationship exists between the holding of conservative views and personality adjustment, as well as between prejudiced attitudes and personality adjustment. Orpen sees these results as suggesting ". . . that in certain settings the holding of fairly conservative and prejudiced views may actually be an indicator of personality adjustment" (pp. 299-300).

More recently, however, Ray³ has shown that there is no relationship

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¹ Boshier, R. A study of the relationship between self-concept and conservatism. *J. Soc. Psychol.*, 1969, 77, 139-140; Larsen, K. S., & Schwendiman, G. Authoritarianism, self-esteem and insecurity. *Psychol. Rep.*, 1969, 25, 229-230.

² Orpen, C. A cross-cultural investigation of the relationship between conservatism and personality. *J. of Psychol.*, 1972, 81, 297-300.

³ Ray, J. J. Do authoritarians hold authoritarian attitudes? *Hum. Relat.*, 1976, 29, 307-325.

between authoritarian behavior and authoritarian attitudes as measured by the F Scale. These results, together with the fact that much criticism has been levelled against the F Scale itself (for instance, with regard to acquiescence response set), have called into question the existing theories regarding the relationship between authoritarianism and self-esteem.

In order to investigate this matter further, Ray's "directiveness" (F) scale (which is sensitive to authoritarian *behavior*) was administered to 50 Afrikaans-speaking college students (average age 19.78 years, $SD = 1.76$) at the Rand Afrikaans University and 100 English-speaking college students (average age 20.40 years, $SD = 2.96$) at Rhodes University together with the measure of self-esteem (SE) used by Bahr and Caplow.⁴ Mean scores (and SD s) for the English and Afrikaans-speaking groups on the F Scale were 55.74 (7.19) and 56.98 (7.79), respectively. On the SE scale the mean scores and SD s were 14.16 (4.75) and 15.64 (3.64), respectively. The relationship between authoritarian behavior and self-esteem for Afrikaans-speaking students was not significant ($r = .15$), but for the English-speaking group it was ($r = .35$, $p < .001$). Results for the English-speaking group support those of Orpen in suggesting that authoritarians are characterized by high self-esteem, given appropriate social milieux. Results for the Afrikaans-speaking group are more difficult to explain. On the one hand, the fact that they obtained a higher mean and lower SD than the English-speaking group on the SE scale may have influenced the correlation between these two scales. On the other hand, it could be that because Rand Afrikaans University is in Johannesburg, these Afrikaans students are subjected to cultural influences not found at the other more rural Afrikaans universities; their attitudes may therefore be in a state of "flux".

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⁴ Bahr, H. M., & Caplow, T. *Old Men Drunk and Sober*. New York: New York Univ. Press.

RATINGS OF FACIAL BEAUTY BY ASIAN-AMERICAN AND CAUCASIAN FEMALES*¹

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ERICA WAGATSUMA AND CHRIS L. KLEINKE

Liggett has provided an account of perceptions of facial beauty in different cultures over various periods of history.² Data summarized by him (p. 146) from a 1972 survey indicate that college students attached greatest importance on "femininity" ratings of females to smooth skin, full mouth, small nose, and delicate features. Greatest importance for "masculinity" ratings of males was given to firm jaw, large mouth, and large or strong nose. Judgments of the importance of overall body characteristics in attractiveness are reported by Lerner et al.³

In study 1, 40 Caucasian female Ss from Wellesley College rated the importance of various facial features on a 6-point scale (0 = not my idea of a "beautiful type," 1 = very slightly close, 2 = slightly close, 3 = moderately close, 4 = close, 5 = very close). Half of the Ss rated facial features for females and half rated facial features for males (*hair texture*: straight, wavy, kinky, frizzy; *hair color*: black, dark brown, light brown, blonde; *facial shape*: heart, oval, pear, squarish; *nose profile*: pug, hawk, Roman; *nose width*: wide, medium wide, narrow; *mouth*: full lips, average lips, thin lips; *skin tone*: fair, rose, tan, light brown, chocolate).⁴ Ss rated dark brown ($M_s = 3.19$ v. 3.95 ; $t = 2.74$, $p < .01$) and light brown ($M_s = 2.82$ v. 3.70 ; $t = 2.84$, $p < .01$) hair as being more important for beauty in males than in females. Heart ($M_s = 2.83$ v. 1.73 ; $t = 2.27$, $p < .05$) and pear ($M_s = 1.83$ v. $.50$; $t = 3.52$, $p < .001$) faces were judged more important for beauty in females and a square face ($M_s = 1.70$ v. 2.89 ; $t = 2.20$, $p < .05$)

*Received in the Editorial Office, Provincetown, Massachusetts, on September 12, 1978. Copyright, 1979, by The Journal Press.

¹ Requests for reprints should be sent to the second author at the address shown at the end of this article.

² Liggett, J. *The Human Face*. New York: Stein & Day, 1974.

³ Lerner, R. M., Karabenick, S. A., & Stuart, J. L. Relations among physical attractiveness, body attitudes, and self-concept in male and female college students. *J. of Psychol.*, 1973, **85**, 119-129.

⁴ In the data for Study 1 that follow, M_s for ratings of females are given first, and M_s for ratings of males are given second. All t -tests are two-tailed and have 38 df in Study 1 and 28 df in Study 2.

was judged more important for males. A pug nose ($M_s = 1.44$ v. $.59$, $t = 2.01$, $p < .05$) was rated more important for beauty in females and a Roman nose ($M_s = 2.46$ v. 3.50 , $t = 1.88$, $p < .07$) more important for males. A narrow nose ($M_s = 2.81$ v. 1.57 , $t = 2.92$, $p < .005$) and full lips ($M_s = 2.71$ v. 1.86 , $t = 2.75$, $p < .01$) were judged more important for females. Fair ($M_s = 2.94$ v. 1.70 , $t = 2.26$, $p < .05$) and rose skin ($M_s = 2.94$ v. 1.85 , $t = 2.38$, $p < .05$) were judged more important for females and tan skin ($M_s = 3.62$ v. 4.45 , $t = 2.19$, $p < .05$) was judged more important for males.

Study 2 compared ratings of female beauty by 10 (American born) Asian-American female Ss and 20 Caucasian female Ss from Wellesley College.⁴ Asian-American Ss gave more importance to straight hair ($M_s = 4.40$ v. 3.40 ; $t = 1.97$, $p < .06$) and Caucasian Ss gave more importance to frizzy hair ($M_s = .31$ v. 1.60 ; $t = 1.96$, $p < .06$). Asian-American Ss assigned more importance to black hair ($M_s = 4.60$ v. 3.44 , $t = 2.28$, $p < .05$) and dark brown hair ($M_s = 4.20$ v. 2.78 ; $t = 3.08$, $p < .005$). Caucasian Ss assigned more importance to a hawk-nose ($M_s = .00$ v. 1.00 ; $t = 2.98$, $p < .005$) and a Roman nose ($M_s = 1.22$ v. 2.75 , $t = 2.06$, $p < .05$). Caucasian Ss assigned more importance to a wide nose ($M_s = .22$ v. 1.33 ; $t = 2.25$, $p < .05$), as well as to a narrow nose ($M_s = 1.00$ v. 2.78 ; $t = 2.77$, $p < .01$). Asian-American Ss gave greater importance to fair skin ($M_s = 4.11$ v. 2.70 ; $t = 2.08$, $p < .05$).

In general, finer features appear more important in judgments of facial beauty for Caucasian females *versus* Caucasian males and Asian-American *versus* Caucasian females.

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⁴ In the data for Study 2 that follow, M_s are given first for ratings by Asian-Americans and second for ratings by Caucasians.

PERCEPTION OF PARENTAL EXPECTATIONS AND NEED ACHIEVEMENT*

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Studies conducted in the different parts of the world have shown that parental expectations are differentially related to the growth of high *n*-Ach. Though findings across cultures differ in detail,¹ it is commonly agreed upon by researchers that authoritarianism and dominance of parents usually lead to lowering of *n*-Ach in child. In an authoritarian culture as India which fosters dependence-proneness,² a disposition which dampens initiative-oriented behavior, it is interesting to note the parental expectations and perception of such demands by the progeny as intrinsic factors in the development of *n*-Ach.

Male college sophomores ($N = 260$) with predominantly rural and middle socioeconomic background of South Bihar (age range 16 to 19 years) took four McClelland *n*-Ach cards³ (1, 28, 83, and 53 in the order mentioned) and Lynn's questionnaire⁴ as measures of *n*-Ach along with Sarason's TAS.⁵ Forty high and 40 low *n*-Ach Ss were finally interviewed on a specially prepared 17-item Perception of Parental Expectation Schedule.

Low *n*-Ach Ss perceived their mothers as being more strict ($\chi^2 = 17.85$, df 1, $p < .001$) and having more influence on them ($\chi^2 = 4.18$, df 1, $p < .05$) than their fathers who were perceived by the high *n*-Ach Ss as rewarding ($\chi^2 = 10.35$, df 1, $p < .01$). Punishment and scolding by parents had no relationship with *n*-Ach. High *n*-Ach Ss also perceived fathers as giving more encouragement ($\chi^2 = 21.43$, df 2, $p < .001$), having higher expectations ($\chi^2 = 27.48$, df 2, $p < .001$), being competition-oriented

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¹ Hayashi, T., & Yamauchi, K. The relation of children's need for achievement to their parents' home discipline in regard to independence and mastery. *Bull. Kyoto Gakuge Univ.*, 1964, 25, 31-40.

² Sinha, J. B. P. Development through Behaviour Modification. Bombay, India: Allied, 1970.

³ Sinha, N. P. C. Need for achievement and academic attainment. *Ind. Educ. Rev.*, 1970, 5, 59-63. Acknowledgement is made to Sinha for making the pictures available to us.

⁴ Lynn, R. An achievement motivation questionnaire. *Brit. J. Psychol.*, 1960, 60, 529-534.

⁵ Sarason, I. G. Interrelationships among individual difference variables: behavior in psychotherapy, and verbal conditioning. *J. Abn. & Soc. Psychol.*, 1958, 56, 472-477.

($\chi^2 = 11.12$, $df = 2$, $p < .01$), and demanding standard of excellence ($\chi^2 = 18.36$, $df = 2$, $p < .001$) from their sons. For the low n -Ach Ss on the last mentioned four variables mother was the object of identification. Encouragement for co-curricular and extra-curricular activities were unrelated to n -Ach. Further, whereas risk taking attitude ($\chi^2 = 42.60$, $df = 2$, $p < .001$) and discouragement after failure ($\chi^2 = 7.42$, $df = 2$, $p < .05$) were associated with father for high n -Ach Ss, perceptions about these were not clear in low n -Ach Ss, i.e., both mother and father taken together were perceived as agents for risk-taking and discouragement. Variables, such as adjustment between parents and with parents, nonconformity and firm decision-making, parental negligence and denial, were not found to be related to n -Ach. The findings of this study clearly suggest that perception of expectations of father is a crucial determiner of high n -Ach in the Indian cultural setting of South Bihar.

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REPLICATIONS AND REFINEMENTS

Under this heading appear summaries of studies which, in 500 words or less, provide useful data substantiating, not substantiating, or refining what we think we know. Additional details concerning the results can be obtained by communicating directly with the investigator or, when indicated, by requesting supplementary material from Microfilm Publications.

The Journal of Social Psychology, 1979, 100, 303-304

AUTHORITARIAN BEHAVIOR AND ATTITUDES IN SOUTH AFRICA*

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Ray¹ has, at great length, shown that there is no relationship between authoritarian attitudes and authoritarian behavior. Quoting from a number of studies he was able to deduce that, although certain authoritarian scales (for example, his "attitude to authority scale" and "balanced authoritarianism scale," to name only two) sometimes predict submissiveness, "... they do not predict the utilization of an authoritative position in a domineering, aggressive, or destructive way" (p. 310). In fact, reviewing a paper by Elms and Milgram,² Ray could show that "It is the rebel, not the acceptor of authority, who has the harsh upbringing and who is venerative of his father" (p. 311).

It was for these reasons that Ray constructed his "directiveness scale" which he hoped would *predict* authoritarian behavior. This scale is a balanced 26-item measure which allows for reverse-scoring and has a reliability of .74. Since Ray sees authoritarianism as "... the desire or tendency to impose one's will on others" (p. 314) and the obtained correlation between his scale and a measure of prejudice was found to be .01 (not

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¹ Ray, J. J. Do authoritarians hold authoritarian attitudes? *Hum. Relat.*, 1976, 29, 308-325.

² Elms, A. C. & Milgram, S. Personality characteristics associated with obedience and defiance toward authoritative command. *J. Exper. Res. in Personal.*, 1966, 1, 282-289.

significant), the hypothesis that there is no relationship between authoritarian attitudes and authoritarian behavior was supported.

A similar study³ was conducted in South Africa among Afrikaans-speaking college students and the results were found to support Ray's hypothesis: a correlation of $r = .21$ ($n.s.$) was obtained. However, this study can be criticized on the grounds that it was conducted on Afrikaans-speaking students only; no attempt was made to include the responses of English-speaking students. Moreover, the group tested was very small ($N = 38$).

To counter these shortcomings, the present study attempted a cross-cultural check of Ray's findings among 90 Afrikaans-speaking male and female students (average age 19.78 years, $SD = 1.76$) at Rand Afrikaans University and 100 English-speaking male and female students (average age 20.40 years, $SD = 2.96$) at Rhodes University. Ray's directiveness scale and a modified⁴ form of his prejudice scale were administered. The split-half reliability of the directiveness scale among Afrikaans- and English-speaking students was .69 and .61, respectively. Correlations for both groups were not significant: among the Afrikaans-speaking group $r = .01$, among the English-speaking group $r = .19$ ($p > .05$). These results, which support Heaven's earlier finding in South Africa, indicate further support for Ray's hypothesis.

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³ Heaven, P. C. L. Do authoritarians hold authoritarian attitudes? The case of South Africa. *J. of Psychol.*, 1977, **95**, 169-171.

⁴ Heaven, P. C. L., & Moerdyk, A. Prejudice revisited: A pilot study using Ray's scale. *J. Behav. Sci.*, 1977, **1**, 217-220.

BIRTH ORDER AND LIFE STRESS*

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A controversial body of research has developed concerning the cumulative effects of recent events in one's life (e.g., divorce, death of a loved one, change of residence) which require personal or social readjustment on the part of the individual. Such effects are viewed as being additive within a given time period and have been related empirically in a stress paradigm to the onset of illness, accidents, psychiatric symptoms, and to interference with role or task performance. One question, however, which has been raised in connection with this research, concerns potential individual mediator variables.¹

As higher levels of life change reflect in large part the disruption of supportive social or familial relationships, a birth order hypothesis may be derived. Persons who are first born or only children consistently have been found to be more dependent and more affiliative, particularly under stressful circumstances.^{2,3} As such, firstborns would be expected to be more sensitive generally to the importance of social support systems, and to have attended to such relationships. In times of significant life change they would be likely, therefore to find it easier to call upon alternate support systems (e.g., relatives, co-workers, church members), or to seek substitute relationships for those disrupted. Such activity on their part might be expected at least to minimize the disruptive effects of life change. Such support systems have been found elsewhere to mediate the relationship between life change and medical complications.⁴

To test this hypothesis, the scores of 196 American college undergraduates (94 male, 102 female) on the Social Readjustment Rating Scale,⁴ covering the previous year, were related to academic performance. At the

* Received in the Editorial Office, Provincetown, Massachusetts, on August 31, 1978. Copyright, 1979, by the Journal Press.

¹ Rabkin, J. G., & Struening, E. L. Life events, stress, and illness. *Science*, 1976, 194, 1013-1020.

² Adams, B. N. Birth order. A critical review. *Sociometry*, 1972, 35, 411-439.

³ Warren, J. R. Birth order and social behavior. *Psychol. Bull.*, 1966, 65, 38-49.

⁴ Holmes, T., & Rahe, R. The social readjustment rating scale. *J. Psychosomat. Res.*, 1967, 11, 213.

end of the semester, a $2 \times 2 \times 2$ ANOVA assessed the effects of birth order, gender, and life change score on the percentage of total points (84) earned in their introductory psychology courses. Life change scores were classified as high or low on the basis of a median split ($Mdn = 204.5$). While there were no main effects for life change or birth order, a main effect was observed for gender ($F(1,188) = 13.09, p < .001$) with females demonstrating higher performance. The expected interaction between birth order and life change was observed as well ($F(1, 94) = 4.48, p < .05$). Extensive life change was associated with lower academic performance, but only among *later* born students. Mean percentage points earned as a function of birth order and life change score are as follows: firstborn—High = 79.41%, Low = 78.41%; later born—High = 75.60%, Low = 76.40%.

Thus, the performance of firstborns on a relevant task was found to be less affected by recent life changes requiring social readjustment or adaptation energies. One interpretation of such data, derived from earlier laboratory research, is that firstborns may have benefited from a heightened sensitivity to the need for actively maintaining one's social support systems.

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MEDIA VIOLENCE AND CATHARSIS IN COLLEGE FEMALE*

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Studies that have examined the effects of media violence on children and adults have focused on the tenability of the catharsis hypothesis. Strong arguments have been made both for¹ and against² this hypothesis. Proponents of the notion of catharsis maintain that viewing violent films enables people to purge themselves of hostile feelings. Opponents maintain that viewing violent films reinforces aggression and serves to increase one's tendency to be hostile or aggressive. The most commonly used method for examining the legitimacy of the catharsis hypothesis has been to expose Ss to violent films and then to measure either hostile feelings or aggressive behavior shortly thereafter. The present study attacks this issue in a different way by examining levels of manifest hostility and hostility guilt as a function of Ss' preferences for violent or nonviolent television programs. If proponents of the catharsis position are correct, individuals who show strong preferences for violent television shows should have lower levels of hostility than those who rarely watch violent programs. In addition, it would follow that viewing violent films would result in higher levels of hostility guilt because these Ss would be acutely aware of the ill effects of violence and would possess strong guilt feelings relative to the performance of such acts. However, if the opponents of the catharsis position are correct, those who show strong preferences for violent programs will have high levels of manifest hostility accompanied by low levels of hostility guilt; they will be accustomed to violent behavior and will not have negative feelings in this regard.

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¹ Feshbach, S. The stimulating versus cathartic effects of a vicarious aggressive activity. *J. Abn. & Soc. Psychol.*, 1961, 63, 381-385. Feshbach, S., & Singer, R. D. *Television and Aggression*. San Francisco, Calif.: Jossey-Bass, 1971.

² Berkowitz, L., & Alioto, J. T. The meaning of an observed event as a determinant of its aggressive consequences. *J. Personal & Soc. Psychol.*, 1973, 25, 206-217. Buvinic, M. L., & Berkowitz, L. Delayed effects of practiced versus unpracticed responses after observation of movie violence. *J. Exper. Soc. Psychol.*, 1976, 12, 283-293.

The Ss were 50 white females in child psychology classes at a Southern university. Each S was administered the Manifest Hostility Scale, the hostility guilt scale of the Mosher Guilt Scales, and a 64-item television-program-preference questionnaire in which Ss were presented with eight violent and eight nonviolent shows through the use of paired comparisons.³ The shows were chosen on the basis of the results of a pilot study in which ratings of viewer awareness, popularity, and violent content were established for all weekly programs airing in the 1977-1978 season. The questionnaires were presented (in random order) in one session to the Ss who were told that our basic interest was in their viewing preferences and that the other two scales merely provided some background information that would be helpful to us in evaluating their responses.

Following the performance of a median split based on preferences for violent programs, analyses of variance were carried out on the data. It was found that the group which showed strong preferences for violent programs scored higher in manifest hostility [$F(1,48) = 14.45, p < .001$] and lower in hostility guilt [$F(1,48) = 13.65, p < .001$] than the other group. For these college females, consequently, the catharsis approach to aggression is not plausible. Although it is difficult either to establish a cause and effect relationship or to make sweeping generalizations, it is clear that repeatedly viewing violent television programs did not result in low levels of hostility in this sample.

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³ Siegel, S. M. The relationship of hostility to authoritarianism. *J. Abn. & Soc. Psychol.*, 1956, 52, 368-372. Mosher, D. L. Measurement of guilt in females by self-report inventories. *J. Consult. & Clin. Psychol.*, 1968, 32, 690-695. Copies of the television-preference questionnaire can be secured from the author upon request.

A SHORT BALANCED F SCALE*

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JOHN J. RAY

By following the procedure of Byrne and Bounds¹ (selecting reversed F items from a large pool on the basis of their empirical correlation with F originals), Ray² has been able to construct a balanced F scale with correlations of up to $-.7$ between its two halves. With 28 ponderous items, it is, however, a little long for many survey applications. Below are given some results from the best 14 items only (nos. 2, 3, 5, 10, 11, 12, 13, 18, 19, 21, 22, 25, 27 and 28 of the 1972 scale).

This short scale was administered to an Australia-wide mail sample by a commercial polling organization. The demographic structure of the more than 4000 responses closely reflected that of the Australian population. From this pool, 200 responses were randomly selected for analysis. (See Ray and Wilson³ for a fuller description of the sampling methods for this poll.)

The coefficient alpha reliability of the short scale was $.80$ and the correlation between its halves (before reversals) was $-.504$. Its correlations with other variables⁴ were as follows (r s above $.138$ are significant $> .05$).

Authoritarians were very likely to be conservative on social issues ($r = .66$) and somewhat likely to be conservative on economic issues ($.19$). They were against consumer agitation ($-.17$) and environmentalism ($-.24$) and were patriotic ($.24$). They were not significantly likely to be misan-

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¹ Byrne, D., & Bounds, C. The reversal of F scale items. *Psychol. Rep.*, 1964, 14, 216

² Ray, J. J. A new balanced F scale—and its relation to social class. *Austral. Psychol.*, 1972, 7, 155-166.

³ Ray, J. J., & Wilson, R. S. Social conservatism in Australia. *Austral. & New Zeal. J. Sociol.*, 1976, 12, 254-257.

⁴ The scales used may be found in the following sources: Eysenck, S. B. G., & Eysenck, H. J. On the dual nature of extraversion. *Brit. J. Soc. & Clin. Psychol.*, 1963, 2, 46-55. Greenwald, H. J., & Satow, V. A short social desirability scale. *Psychol. Rep.*, 1970, 27, 131-135. Ray, J. J. Conservatism as Heresy, Sydney, Austral.: A. N. Z. Book Co., 1974, Chap. 46, appendix IV. Ray, J. J. Measuring environmentalist attitudes. *Austral. & New Zeal. J. Sociol.*, 1975, 11, 70-71. Ray, J. J. & Wilson, R. S. *Op. cit.* Rosenberg, M. Misanthropy and political ideology. *Amer. Sociolog. Rev.*, 1956, 21, 690-695. Wilson, R. Are you experienced? *Feedback*, 1973, 8, 29-31. Zuckerman, M. Dimensions of sensation-seeking. *J. Consult. Clin. Psychol.*, 1971, 36, 45-52. Table 2.

thropic (-.136) or unsociable (.12) but were not experience seekers (-.48), hedonistic (-.29), impulsive (-.18), or upwardly mobile (-.23). They had a strong dose of the Protestant ethic in the sense of frugality (.43), were family-oriented (.28), fashion-conscious (.15), and tended to lie (r of .26 with the short social desirability scale). When asked to rate themselves on the two traits of conservatism and authoritarianism, they rated themselves as conservative (.22), but were not particularly likely to see themselves as authoritarian (.03).

This pattern of traits seems quite reminiscent of what might be expected of the authoritarian as originally conceived, but it might also be noted that it is equally consistent with an interpretation of the F scale as measuring solely conservatism.

Like the full balanced F scale, the short form has some repetitious (5 & 12) and contradictory (12 & 21) items, but it should be noted that this is also a feature of the original F items used (*cf.* 22 & 25 or 18 & 27 of the 1972 scale), and the contradictories are psychological rather than exact logical opposites.

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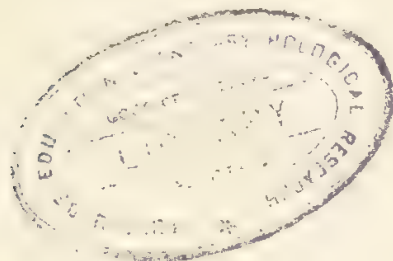
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9. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 132.122, PSM)
 The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes (Check one)

☐ HAVE NOT CHANGED DURING PRECEDING 12 MONTHS

☐ HAVE CHANGED DURING PRECEDING 12 MONTHS

(If changed, publisher must submit explanation of change with this statement.)

10. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	ACTUAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE
A. TOTAL NO. COPIES PRINTED (Net Press Run)		
B. PAID CIRCULATION		
1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES	2842	2825
2. MAIL SUBSCRIPTIONS	none	none
C. TOTAL PAID CIRCULATION (Sum of 10B1 and 10B2)	2256	2284
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES	2256	2284
E. TOTAL DISTRIBUTION (Sum of C and D)	34	34
F. COPIES NOT DISTRIBUTED		
1. OFFICE USE, LEFT OVER, UNACCOUNTED, SPOILED AFTER PRINTING	2290	2318
2. RETURNS FROM NEWS AGENTS	552	507
G. TOTAL (Sum of E, F1 and 2—should equal net press run shown in A)	none	none
	2842	2825

11. I certify that the statements made by me above are correct and complete.

SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER

Powell Murchison, Business Manager

12. FOR COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES (Section 132.121, Postal Service Manual)

39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates."

In accordance with the provisions of this statute, I hereby request permission to mail the publication named in item 1 at the phased postage rates presently authorized by 39 U. S. C. 3626.

SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER

Powell Murchison, Business Manager

ABBREVIATIONS OF WORDS USED IN THE TITLES OF JOURNALS

(One-word titles are never abbreviated. The word "the" is not used, nor its equivalent in any other language. The word "of" or its equivalent in other languages is used only to discriminate what would otherwise be identical titles in different languages. The word "and" is always used, but indicated by "&" in the Roman alphabet. Only English words are indicated here, but the corresponding words in other languages should receive a corresponding abbreviation. All abbreviations and all one-word titles should be in italics.)

Abnormal	<i>Abn.</i>	Japanese	<i>Jap.</i>
Abstracts	<i>Abst.</i>	Journal	<i>J.</i>
American	<i>Amer.</i>	Mathematical	<i>Math.</i>
Anatomy	<i>Anat.</i>	Measurement	<i>Meas.</i>
Animal	<i>Anim.</i>	Medical	<i>Med.</i>
Applied	<i>Appl.</i>	Mental	<i>Ment.</i>
Archives	<i>Arch.</i>	Monographs	<i>Monog.</i>
Association	<i>Assoc.</i>	Neurology	<i>Neurol.</i>
Attitude	<i>Attit.</i>	Opinion	<i>Opin.</i>
Australian	<i>Aust.</i>	Orthopsychiatry	<i>Orthopsychiat.</i>
Behavior	<i>Behav.</i>	Personality	<i>Personal.</i>
British	<i>Brit.</i>	Personnel	<i>Person.</i>
Bulletin	<i>Bull.</i>	Philosophy	<i>Philos.</i>
Bureau	<i>Bur.</i>	Physics	<i>Phys.</i>
Canadian	<i>Can.</i>	Physiology	<i>Physiol.</i>
Character	<i>Charac.</i>	Proceedings	<i>Proc.</i>
Children	<i>Child.</i>	Psychiatry	<i>Psychiat.</i>
Chinese	<i>Chin.</i>	Psychoanalysis	<i>Psychoanal.</i>
Clinical	<i>Clin.</i>	Psychology	<i>Psychol.</i>
College	<i>Coll.</i>	Psychosomatic	<i>Psychosomat.</i>
Comparative	<i>Comp.</i>	Quarterly	<i>Quart.</i>
Consulting	<i>Consult.</i>	Religious	<i>Relig.</i>
Contributions	<i>Contrib.</i>	Research	<i>Res.</i>
Development	<i>Devel.</i>	Review	<i>Rev.</i>
Educational	<i>Educ.</i>	School	<i>Sch.</i>
Experimental	<i>Exper.</i>	Science	<i>Sci.</i>
General	<i>Gen.</i>	Social	<i>Soc.</i>
Genetic	<i>Genet.</i>	Statistics	<i>Stat.</i>
Indian	<i>Ind.</i>	Studies	<i>Stud.</i>
Industrial	<i>Indus.</i>	Teacher	<i>Teach.</i>
International	<i>Internat.</i>	University	<i>Univ.</i>
Italian	<i>Ital.</i>		

Preparation of Manuscripts for The Journal Press

GENERAL INSTRUCTIONS

1. The proper sequence for the parts of your submitted manuscript is as follows (a) text (b) references, (c) footnotes, (d) tables, (e) figures, and (f) figure legends. However, monographs start with a table of contents and may have an acknowledgment page before the text and an appendix immediately after the text.
2. Use heavy typewriter paper, $8\frac{1}{2} \times 11$ inches, double-space all lines, and leave margins for editorial work. Do not use onionskin, odd sizes, and abrasive or wax finishes.
3. Submit original typewritten version and one copy. Retain second copy for proofing.
4. Retype any page on which written corrections have been made.
5. Do not begin a sentence with a numeral.
6. A summary at the beginning of the text is required for articles over 500 words.
7. Each quotation should indicate the page number of the original source. The original publisher must give permission for lengthy quotations and use of tables or figures.
8. Do not fold your manuscript.
9. Enclose a submission letter, with a statement that the manuscript is not under consideration elsewhere. If you are unknown to the Editors, kindly give your credentials.

FORMAT AND SPECIFIC INSTRUCTIONS

A. TEXT DIVISIONS

I. THE TITLES OF JOURNAL ARTICLES AND THE MAJOR SUBDIVISIONS OF MONOGRAPHS ARE PRINTED IN TEN-POINT CAPS CENTERED ON THE PAGE

A. THE NEXT SUBDIVISION TITLE IS PRINTED IN CAPS AND SMALL CAPS CENTERED ON THE PAGE

1. Then *Italics, with Principal Words, Upper and Lower Case, Centered on the Page*
 - a. Then *italics, upper and lower case, 1-em run-in side head.*
 - (1). Then *italics, upper and lower case, 2-em run-in side head.*
 - (a). Then *italics, upper and lower case, 3-em run-in side head.*
- [Further subdivision should be merged into the text without marginal indentation, and should be numbered with small letters.]

B. REFERENCES

References should be arranged in alphabetical order by author, numbered and referred to in the text by number (2). Double-space!

The proper form of a book reference is as follows:

2. DOE, J. The Preparation of Manuscripts. New York: Holt, 1963. Pp. 400-418.

The proper form of a journal reference is as follows:

2. DOE, J. The preparation of manuscripts. *J. Gen. Psychol.*, 1963, 68, 450-462.

If in the text it is desirable to refer to a page, thus (2, p. 45).

C. FOOTNOTES

Use as few as possible and number consecutively in the text thus.¹

¹ Footnote (on the separate footnote page). Double-space!

D. TABLES

Each table should be typed on a separate sheet and should be Arabic numbered (Table 2). Each column requires a heading. Vertical lines should be avoided. Mention tables consecutively in the text and indicate approximate insertion points.

E. FIGURES

Figures should be submitted as glossy prints of the approximate size for final reproduction (ordinarily 4-4½ inches in width). Lettering and lines should be sharp and clean. Figures should be Arabic numbered (Figure 2) in the text, and have consecutive mention and approximate insertion points. Each figure requires a legend, but all legends should be submitted double-spaced on a separate Figure Legends page.